Change and Transition on Crete

Interpreting the Evidence from the Hellenistic through to the Early Byzantine Period

Papers Presented in Honour of G. W. M. Harrison

Edited by
Jane E. Francis and Michael J. Curtis

ARCHAEOPRESS

Change and Transition on Crete

Interpreting the Evidence from the Hellenistic through to the Early Byzantine Period

Papers Presented in Honour of G. W. M. Harrison

Edited by

Jane E. Francis and Michael J. Curtis

Archaeopress Archaeology

Archaeopress Publishing Ltd
Summertown Pavilion
18-24 Middle Way
Summertown
Oxford OX2 7LG

www.archaeopress.com

ISBN 978-1-80327-056-2
ISBN 978-1-80327-057-9 (e-Pdf)

Cover: Column base, Aptera peristyle villa. © Hellenic Ministry of Culture and Sports, Hellenic Organisation of Cultural Resources Development, Ephorate of Antiquities of Chania.

Contents

Acknowledgements

The editors would like to thank the Department of Classics and Archaeology at the University of Nottingham for hosting the *1st Colloquium on Roman Crete: The Enigma of Late Hellenistic and Roman Crete: Unanswered Questions* and in particular Professor Christopher Loveluck and Dr Chrysanthi Gallou for their assistance and support, and the Society for the Promotion of Hellenic Studies and the University of Nottingham for sponsoring the event. We are very grateful for the contributions of scholars who presented their research at this conference. We also thank Jacques Perreault for assistance with foreign-language contributions.

During the course of assembling this volume we have seen the arrival of the Coronavirus disease (COVID-19), which rapidly escalated into a global pandemic. As a result of this, contributors faced new challenges in environments where lockdowns and library closures suddenly became commonplace. Sadly, some of our planned contributions had to be put on hold and others changed to suit the circumstances and the limited access to reference material. We would like to express our thanks to our contributors for their dedication and persistence with their articles in these difficult times.

Jane E. Francis

Michael J. Curtis

About the Authors

Jane Francis holds a PhD in Classical Archaeology from Bryn Mawr College and is Associate Professor in the Department of Classics, Modern Languages and Linguistics at Concordia University in Montreal. Her research focuses on the Roman period on Crete, including ceramics, fabric analysis, sculpture, Cretan caves, ancient beekeeping and landscape archaeology. She is one of the co-authors of the Sphakia Survey Project final publication.

Michael J Curtis is a professional landscape and coastal archaeologist and a Tutor in Archaeology and Ancient History for Northamptonshire Adult Learning Service. He holds a BA in Archaeology from the University of Southampton and an MA in Archaeology from the University of Nottingham. He is an Honorary Fellow in the School of Archaeology and Ancient History at the University of Leicester where he is studying the Roman Imperial Ports and Harbours of Crete. He is the lead member in a Greek-led project researching and surveying the Roman harbour at Ierapetra, in eastern Crete, and within the UK is currently engaged in research into the Catuvellauni, a late Iron Age and Roman tribe in south-eastern Britain.

Nicholas Victor Sekunda was born in 1953 to an English mother and a Polish father. He studied Ancient History and Archaeology at Manchester, from which he received his PhD in 1981. He has worked at Monash and the Australian National University in Australia, in Oxford and Manchester in England, and Toruń in Poland. He currently is Head of Department for Mediterranean Archaeology at Gdańsk University.

Adam Pałuchowski was born in 1969 in Rybnik (Upper Silesia). He is an ancient historian, Greek epigrapher and classicist educated in Wrocław (Poland) and in Tours (France), who received his 'cotutelle' PhD from the University of Wrocław and from the University of Tours (2003). He has been an Assistant Professor at the University of Wrocław since 2004 and published papers as well as two books on Roman Crete (*Fastes des protocosmes des cités crétoises sous le Haut Empire* and *La coloration sociale des noms de personnes grecs sur l'exemple des notables crétois sous le Haut Empire*). At present his main research interests are slavery and forms of dependency in Crete from the Archaic epoch to the Roman conquest – on this subject a few papers have been published and a monograph is in progress.

Vassilki E. Stefanaki is an Archaeologist-Numismatist in the Numismatic Museum (Athens). Between 2002 and 2011, she has worked in the Archaeological Institute of Aegean Studies (Rhodes) on a project untitled 'Coins-Coinage of the Dodecanese'. Her research focuses on the coinages of the islands of Crete, Cyclades and eastern Aegean, minted between the Archaic and the Roman period. She is the author of *Νομίσματα-Νομισματική Αιγαίου, Κως I* (Athens 2012) and *Hiérapytna, Histoire et Monnayage jusqu'à la conquête romaine* (Ioannina 2021).

Calliope Emm. Galanaki is an archaeologist at the EFAHRA. In the years 1982–1986 and 1988–1989 she has participated in the excavations at Archanes, the Idaean Cave and Zominthos. From 1988 onwards, she has been excavating in the Pediada and Monofatsi provinces, especially at Chersonissos, along with the supervision of public works in central Crete. Her main research interests include the monumental topography of the ancient cities of central Crete and the management of their water resources with relevant articles and other publications.

Christina Papadaki studied archeology at the University of Crete, where she completed postgraduate studies specializing in Prehistoric Archeology. She completed her doctoral dissertation at the National and Kapodistrian University of Athens. Since 2019, she has been a postdoctoral researcher at the Department of Mediterranean Studies of the University of the Aegean. She has worked at the Archaeological Museum and the Ephorate of Antiquities of Heraklion as well as at the Directorate of the National Archive of Monuments. She has taken part in systematic and salvage excavations, research programs and surface research in Crete (Eleftherna, Monastiraki Amari, Malevizi Monastery, Krousonas, Tylissos, Knossos, Poros - Katsambas, ancient Eltina, Sampas, Galfios, Galatas, Galatios, Galatas, Galatas Silla, Agia Pelagia, city of Heraklion, Gournes Pediados, Kastelli Pediados, Hersonissos, Zakros), Gavdos, the Cyclades and mainland Greece. Her scientific works concerns the Cretan culture of the Minoan, Archaic, and Hellenistic–Roman times and are published in the proceedings of international conferences, collective volumes and in foreign and Greek archaeological journals. She is currently part of a research team studying Egypt and Egyptian scarabs in the Aegean (8th–6th centuries BC).

Kleanthis Sidiropoulos is a graduate of the University of Crete (1980–1984 BA, Classics and Archaeology) and he carried out postgraduate studies on Numismatics at the University of Cologne, Germany (1992–1996). He worked in the university's excavation of ancient Eleutherna (Sector I), Crete (1985–2003) and at the same time in the Program of Excavation and Restoration at Ancient Messene, Peloponnese (1988–2015). He is currently a curator at the Archaeological Museum of Heraklion (Crete). He has participated in excavations and surveys in Southern Greece, the Cyclades and Crete, with a focus on the study and publication of finds related to monetary and wider economic history from Archaic to modern times, architecture and the restoration of Hellenistic and Roman monuments. He has prepared and realized the numismatic exhibitions of the Archaeological Museum of Heraklion and the Historical Museum of Crete, as well as related educational programs. He is present in scientific events with lectures and participation in conferences on topics related to his research interests, which extend from antiquity to modern history.

Nadia Coutsinas is a Hellenic Foundation for Research and Innovation (HFRI) post-doctoral researcher at the Institute for Mediterranean Studies – FORTH (Greece), and an associate researcher at the CReA-Patrimoine, ULB (Belgium). She received her PhD both from the university Paris 1 Panthéon-Sorbonne and the Université Libre de Bruxelles. Her research interests include archives and history of archaeology, Greek fortifications and defence studies, settlement patterns and landscape archaeology, harbours and maritime networks, as well as glass manufacture and production from the Hellenistic to the Early Byzantine period. Since 2018, she has been the primary investigator for the project 'SettleInEastCrete: Spatial Dynamics and Settlement Patterns in Eastern Crete from the Classical to the Venetian Period' (IMS-FORTH).

Martha W. Baldwin Bowsky is a Professor Emerita of Classical Studies, retired from the University of the Pacific in Stockton, California. She graduated from the University of North Carolina at Chapel Hill and the University of Michigan at Ann Arbor. Throughout her career she has been active in epigraphical research on the archaeological sites and in the storerooms and museums of Crete, with a particular interest in the Roman period on the island. She has authored a number of articles both publishing new inscriptions — on stone and on pottery — and also setting these and other Cretan inscriptions into their historical and archaeological contexts.

Anna Kouremenos is Macricostas Endowed Teaching Fellow in Hellenic and Modern Greek Studies at Western Connecticut State University, and Lecturer in Ancient History at Quinnipiac University. She specializes in Roman Greece and her research explores aspects of social, cultural, and island identities from an interdisciplinary perspective. Currently she is conducting research on southern Greece in the 2nd century CE, migration in the Greek and Roman worlds, and on the subject of national narratives. She is also interested in Greek and Roman art, ancient history in film, and the reception of antiquity from the Renaissance to the present.

Eleni Nodarou received her BA from the University of Athens and her MSc and PhD from the University of Sheffield. Since 2003 she has been the Head of the W.A. McDonald laboratory of petrography of the INSTAP Study Center for East Crete. Her research interests include pottery analysis, ceramics technology and experimental archaeology. She is currently participating in archaeological projects involving the analysis of Cretan pottery from the Neolithic to the Byzantine periods.

Jennifer Moody is an Aegean archaeologist, specializing in ceramic fabric analysis, and landscape and paleo-climate reconstruction. She has worked on the island of Crete for over 40 years, where she has directed four archaeological surveys (Khania, Vrokastro, Sphakia, Ag. Vasilios). She also helped establish the William A. McDonald Ceramic Petrography Laboratory at the INSTAP Study Center East Crete in Pachyammos Crete in 2002. In addition to Crete, Moody has worked on the Greek mainland (Messenia and Grevena), the Cyclades (Melos and Kea) and Kythera. She is an advocate for landscape conservation and preservation of cultural heritage in Greece and elsewhere. In 1989 she was awarded a MacArthur Fellowship for her research. She has taught at Baylor University and since 2006 has been a Research Fellow in Classics at the University of Texas at Austin. In 1996 she and Oliver Rackham co-authored *The Making of the Cretan Landscape*, for which they won the Runciman prize. A translation of their book was published in Greek in 2004.

Anna C. Moles is Assistant Professor of Mediterranean Archaeology and Osteoarchaeology at the University of Groningen, having worked previously as the Assistant Director of the Irish Institute of Hellenic Studies at Athens. She completed her PhD, entitled *Urbanism and its impact on human health: a long-term study at Knossos, Crete*, at University College London, with MA and MSc degrees from the Universities of St Andrews and Edinburgh respectively. She conducted the skeletal data collection for this work at the Knossos Research Centre of the British School at Athens and has held studentships from the UK Arts and Humanities Research Council, British School at Athens and Onassis

Foundation. Her research uses both the study of human skeletal remains and stable isotope analysis to investigate the impact of large-scale social, economic and political changes on past health and lifeways.

Scott Gallimore is Associate Professor in the Department of Archaeology and Heritage Studies at Wilfrid Laurier University in Waterloo, Ontario, Canada. His research examines the economic history of the Greek world under Roman rule, with particular emphasis on the island of Crete and the northeast Peloponnese. He is currently co-director of the Western Argolid Regional Project in Greece.

Abstracts

The Export of Whetstones from Hellenistic Crete

Nicholas Victor Sekunda

This article is divided into three parts. Its first, and most important aim is to demonstrate that whetstones were exported from Crete to Italy in the Hellenistic period. In the second part of the article, I hope to demonstrate that at least part of this trade was in the hands of an Italian *negotiator* of the *gens Anii*, based in Olous. I will finally attempt to gather the evidence for other members of the *gens Anii* active in trade in the Greek east in the second century BC and will suggest a possible pattern of trade between the Aegean and Campania. In an appendix, a further inscription from Olous containing the name Annios is published.

La dernière ligne droite dans la rivalité acharnée et séculaire entre Phaistos et Gortyne

Adam Pałuchowski

The main aim of the paper will be to sketch the outline of transformations in the status of Phaistos from Hellenistic to early Roman Imperial times, with respect to Gortyn and the extension of its territory on the plain of Mesara, all that against a background of forms of dependence and subsequent reorganizations of urban and rural areas. A diversified evidence will be used: mainly epigraphic (*IC*, *SEG*) and numismatic (Svoronos, Le Rider, Sheedy, Carbone), included onomastic, but also archaeological (chiefly Watrous *et al.*, Baldwin Bowsky, Francis) and narrative (Polybius, Strabo). The departure point will be set at the beginning of the early 3rd century BC when Phaistos is still an entirely sovereign *polis* (*IC* I.xxiii.1*,$_{51-67}$); however, in order to provide a good deal of historical context, the previous developments in more and more conflictual relationships between Phaistos and Gortyn fighting hard against each other for the control of the plain of Mesara since about the middle Archaic period will be taken into account (Perlman, Lefèvre-Novaro, Lippolis). The next step will be a transitional status resulting from the sympolity treaty concluded with Gortyn in *c.* 240–222 BC (Chaniotis no 71), followed (or maybe preceded) by a dependent *polis*/community status (*IC* IV.229 and 330; *SEG* XXIII 1968 563 = Chaniotis no 13,$_{1-7}$), the latter being a problematic issue which should be deeply analysed. At the final stage, after the destruction of Phaistos and incorporation of its territory into the Gortynian *chora* in the middle of the 2nd century BC (Str. 10.479), the crucial question will be that of the new functional redistribution among integrated populations – it means citizens, free people, dependent cities and communities (of course aside from communal slaves, in other words serfs who disappeared from the Cretan servile landscape in the late-2nd or in the early 1st century BC) – within the framework of the functional reorganisation of urban and rural areas in late-Hellenistic to early Imperial times, with regard to new opportunities provided by the access to the large Mediterranean commercial network, stabilised and unified under the Roman rule.

Onomasticon and Social Identity on the Cretan Coins in the Late-Hellenistic and Roman Periods: A Case Study

Vassiliki E. Stefanaki

The purpose of the paper is to examine the function and the social identity of the individuals whose names are inscribed on certain late-Hellenistic and Roman issues of the Cretan cities of Hierapytna, Knossos and Kydonia, minted during periods of transition and change in local and regional politics, economy and society. Apart from the poor epigraphic testimonies of the few cases of complete personal names on Cretan coins, the numismatic material may confirm the opinion that the local magistracies and offices were probably the exclusive privilege of some families of the upper classes. It seems that a mutation of the ruling class with the integration of other social classes into the local ruling circle did not occur in Hellenistic and maybe in Roman times as well.

Τάφοι και Ταφικές Πρακτικές στο Αρχαίο Ρύτιο

Kalliope Galanaki, Christina Papadaki, Kleanthis Sidiropoulos

On the occasion of a small-scale rescue excavation that took place about a decade ago, in a cemetery section of the early Historical to late-Roman period in *Embassos*, on the outskirts of the acropolis of Rytion, the monumental topography, its findings and burial practices are presented. The excavation data of older rescue excavations are reconstructed and their correlation with the adjacent settlement takes place, utilizing, at the same time, the few epigraphic and philological testimonies. Particular emphasis is given to the Hellenistic to Roman and late-Roman phase of the necropolis through their comparison with other published burial assemblages of central Crete of the same period. In conclusion, it seems that Rytion follows the common burial practices in the Cretan Hellenistic and Greco-Roman cities without, however, reflecting the glamour and wealth of metropolises such as Knossos in the north and Gortyna in the south of the island. Although the limitations of the archaeological material do not allow us to draw clear conclusions, it seems that the economic prosperity and possibly the social organization of ancient Rytion, as reflected in the hitherto known excavation data, are recorded at a different, obviously lower, level than other large Cretan cities, possibly due to the peculiarity of the landscape and especially the possibilities that it provided over time to the inhabitants of the area.

Did Rome Really Change Anything? Settlement Patterns of Far Eastern Crete in the Hellenistic and Roman Periods

Nadia Coutsinas

The field of Roman studies for Crete has been flourishing in the past decade. The publication of several surveys, excavations, and other studies brings to our knowledge new archaeological data that can already be put together to give us a more complete image of Roman Crete. In this paper, I decided to look at the settlement patterns at the turn of the Hellenistic and Roman periods to see what differences could be identified and if there is indeed a specificity of the early Roman period. I chose to focus specifically in far eastern Crete, from the plain of the Ierapetra isthmus to the eastern shores of the island. Four geographical zones can be distinguished: the north-eastern peninsula and Itanos, the basin of Zakros, the Praisos corridor, the Ierapetra isthmus and plain, as well as two islands, Kouphonisi and Chrysi. Since the middle of the 2nd century BC, the main urban centres are Itanos and Hierapytna, at both ends of the region studied. The countryside is slowly filling up with villages, hamlets and farmsteads. A new feature, a few villas, have been identified, which reveal a pattern of agricultural exploitation, if we consider that they were the centre of estates. The existence of amphora workshops and warehouses reveals the agricultural industry and the patterns of trade, as well as the very special role of the isthmus.

Beside the Sea: Unravelling the Maritime Landscape of Hellenistic and Roman Crete

Michael J. Curtis

Our perspective on Hellenistic and Roman Crete is largely based on research and investigation on inland sites. This article seeks to begin to address this situation by presenting an overview of the maritime landscape from the 3rd century BC through to the 2nd century AD, considering the island in the context of the developing trade networks and shipping routes as, over time, Crete became an exporter in its own right. The article offers an initial perspective on the development of harbours, considering their functionality and discussing some of the logistics of maritime trade on the island. It also offers a view on the strategic and economic importance of the island in the eyes of Rome, adding food for thought and another dimension to the reasoning behind the military interventions and eventual conquest in 67 BC.

Becoming Roman: The Cretan Evidence of Augustan Stamps on Italian Sigillata

Martha W. Baldwin Bowsky

This study presents some of the material evidence for how Crete became Roman, that is, involvement in the wider economic system of the Roman Empire as heralded by the presence of imported pottery and other goods. The mid- to late-Augustan stamps on Italian Sigillata found at four cities on the north coast of Crete date to a midpoint in the transformation of Crete from Hellenistic to Roman, between the mid-1st century BC to the mid-1st century AD. Participation in trade networks that stretched across the island and the Mediterranean is likely to have been an important element in the development of the island's economy, particularly its primary large-scale export industry, the Cretan wine trade.

The mid- to late-Augustan stamps on Italian Sigillata found on Crete provide concrete, physical evidence for a number of aspects of the economic transformation of Crete from Hellenistic to Roman and the island's role as a transshipment point. On Crete itself, Augustan stamps have been found and published not from the provincial capital of Gortyn but from cities along the north coast of Crete, not only at the colony of Knossos or the free city of Lappa but also the polities of Eleutherna and Aptera. At the same time, the Italian provenience of the Augustan stamps neatly reflects the history of the Italian Sigillata industry in the late-1st century BC and the early 1st century AD, beginning with stamps from Arezzo followed by Pisa and other locations in Etruria, the Po Valley, Puteoli, and central Italy. The concrete evidence provided by these stamps is significant for understanding Crete's trade relations in the Augustan period, as an island at a crossroads and transshipment point between north-south (or south-north) and west-east (or east-west) routes. These stamps document a critical stage in Cretan integration into the Roman economy, between Late Hellenistic and Early Roman. Cretan consumers took advantage of the availability of these distinctive red-gloss wares and Crete's strategic position amid Mediterranean routes of transit and exchange, to eat and drink from the fashionable wares we find in the material record today.

Origanum dictamnus (Dittany of Crete): Testaments, Uses, and Trade of a Sacred Plant in Antiquity

Anna Kouremenos

In Virgil's *Aeneid*, Book 12, the goddess Venus rushes to heal her wounded son Aeneas with a stalk of the plant *dictamus*, known today as dittany of Crete. This passage is depicted in a wall painting from the House of Sirico at Pompeii, where Aeneas is shown being attended by a physician and his mother Venus rushing to his side carrying a few stalks of the sacred plant. This image suggests that to the Greeks and Romans, *dictamus*, a plant that is endemic to Crete, was associated with divinities and with healing. Indeed, in antiquity, it was considered a 'panacea', a drug against every illness. No less than twenty-four ancient writers have praised its healing properties and it was traded across the Greek and Roman worlds. My paper focuses on these ancient testaments about the plant´s healing properties, its presence in archaeological and artistic contexts, and its role in the Cretan economy from the Minoan period to Late Antiquity.

The Fabrics of Roman to Early Byzantine Cretan Amphorae from the Sphakia Survey

Jane Francis, Eleni Nodarou, Jennifer Moody

The identification of Hellenistic and Roman amphora production centers on Crete is ongoing, and the original list of 17 kiln sites (Marangou-Lerat 1995) has increased to 22 in recent decades. The Sphakia Survey Project, in southwest Crete, has not found evidence of kilns, but petrographic and macroscopic fabric analysis, coupled with studies of amphora shapes and distribution, suggests a heretofore unidentified production center possibly located somewhere in southwest Crete.

Preliminary research identified several Cretan fabrics among Sphakiote 'Cretan' amphorae and a group of late-Roman to early Byzantine combed amphorae. The latter are the predominant amphora type in Sphakia in this later period, and fabric similarities to earlier amphorae raised questions about the continuity of production and interaction with Sphakia. The multidisciplinary program we developed to investigate these questions distinguished distinctive fabric recipes that are, so far, unique to our study area, perhaps indicating the existence of an additional amphora production center. We are confident that further applications of this combined methodology will continue to improve our understanding of the complex issues surrounding the production and circulation of Cretan transport amphorae.

Health, Diet and Lifeways at Knossos during the Hellenistic, Roman and Late-Antique Periods

Anna Moles

This paper aims to investigate the impact of social and environmental changes at the major urban centre of Knossos on human health and diet, and to study how demographic and economic growth (Hellenistic and early Roman) and decline (late antique) can affect individual lifeways.

Knossos, during the late-Hellenistic to Roman period, was an urban centre of a large enough scale that it suffered from the effects of dense, unhygienic living conditions and infectious disease. This is demonstrated by the low life expectancy and large numbers of deaths in the older sub-adult and young adult age categories. The impact of disease would have been supplemented by warfare, known throughout Crete in the Hellenistic period, and its secondary impacts, such as resource deficits and famine. Population growth at Knossos during the Hellenistic period, and the establishment of the *Colonia Iulia Nobilis Cnosus* in the Roman period represent new and increased contacts through trade and migration. Changes in political administration as well as climate change in the 3rd century, could have had significant ramifications for agriculture and productivity. These factors are likely to have had an impact on the prosperity, diet, health and longevity of the population. With the introduction of Christianity and lessening of population pressures in the late-antique period, differences can be observed in diet and labour patterns.

This paper demonstrates the potential research questions that can be addressed by fragmentary assemblages from rescue excavations. Human skeletal remains are an under-studied resource for this time period in Crete, and they give greater insight and a new perspective into the lives of individuals at Knossos from the Hellenistic to late-antique periods.

Hazard, Risk, Vulnerability and the AD 365 Earthquake on Crete

Scott Gallimore

This paper provides a critical assessment of the transformative potential of the AD 365 earthquake and tsunami on Crete by applying the framework of hazard, risk, and vulnerability to evaluate the character of the island's society before and after. This framework is regularly used to analyse modern populations threatened by various disasters in an attempt to develop mitigation strategies. For an ancient disaster, it can offer a more refined picture of response and resilience to events like the AD 365 earthquake and can contextualize the degree of material and social transformation evident in its aftermath.

1.

Foreword
G. W. M. Harrison and the Study of Roman Crete

Jane E. Francis

'Come for the Minoans; stay for the Romans'

(G. W. M. Harrison, Lecture to the Archaeological Institute of America, Ottawa Chapter, Winter 2021)

George Harrison first encountered Crete the fall of 1979, when he was a graduate student at the American School of Classical Studies in Athens. This trip, during which the only Roman site visited was Gortyn, did not particularly excite his attention; his PhD thesis topic, on Seneca and Lucan, did not lend itself to any aspect of the island's history. In the following year, however, he ended up staying at the British School at Knossos and was asked to provide assistance with the excavations underway at the Knossos Medical Faculty site. Perhaps because he was studying Roman literature, or perhaps simply as an extra pair of hands, he was assigned the study of one of the tombs. He later analyzed some architectural plasters from Knossos, which was presented at the annual meeting of the Archaeological Institute of America in 1982, perhaps the first paper on Roman Crete at this venue in quite some time. An interest in the Roman period on the island firmly now planted, George returned to Crete for two subsequent summers and spent much time travelling around the island and looking for Roman remains, guided by the few available publications. He filled notebooks and took copious photographs, many of which reflect ruins and monuments no longer in existence. At this time, he proposed to his university, Johns Hopkins, changing his thesis topic to an investigation of Roman Crete. The response was symptomatic of the general disregard for this subject at this time: George was informed that he would never get an academic job with a thesis on Roman Crete; he should complete his topic on Roman philology and after he got a job, he could then explore Roman Crete as much as he wished. And George followed this advice.

At the same time that George was undertaking his research on Roman sites on Crete, interest in the subject was raised by the work of Ian Sanders, whose posthumous PhD thesis was being edited for publication by Peter Warren, finally appearing in 1982. This work not only put the study of Roman Crete on the map but also provided a much-needed gazetteer of sites and the first synthesis of known material from the period. The impact of this monumental work on George's research was twofold. First, it confirmed to him that he was going to the right places and in the right direction, and that the overwhelming, rich abundance of Roman remains on the ground had been largely ignored by the scholarly community. Second, his early decision not to write a gazetteer was the correct one, and that a more intensive synthetic analysis would be more beneficial.

Thus, PhD in Latin literature in hand (1984), George launched into an academic career, which allowed him to pursue research on Roman Crete. His early forays focused on the joint province of Crete and Cyrenaica, which attracted the attention of scholars working on the other side of the Libyan Sea and led to invitations to contribute to the subject as the 'Roman Crete' person. A stream of conference papers and publications continued, addressing Roman attitudes to Crete, land tenure and management, the Roman conquest, public and private architecture, food production, Romanization, and the Cretan Roman economy. Between 1988 and 1992, he was employed in the study of the Roman pottery and sites from the Vrokastro Survey project in east Crete (published in 2004, 2005), and from 1989 to 1992, participated in the survey of Pseira, with a focus on the Byzantine farms, published in 2005. This tenure in east Crete also led to the identification and publication of a hitherto unknown marble quarry. Underpinning all this research was *The Romans and Crete* (1994), the result of all George's early research from about 1980 onwards. This book built on the work of Sanders, but also integrated scholarship from a wider range of areas — e.g., epigraphical, numismatic, artistic, architectural, and historical. Some comparisons were derived from cultures and periods outside Roman Crete, but this was symptomatic of the state of scholarship at the time: there simply was no Cretan material upon which to draw. This book became the basis for so much future research by successive generations and established George as a 'foundation scholar' in the area of Roman Crete, whose work — in some aspect — often forms the first point of departure.

Since the appearance of *The Romans and Crete*, interest in the subject has grown. This has been due in part to an increase in large-scale, multi-year excavations of sites either predominately Roman (i.e., Gortyn, Itanos) or with substantial Roman phases (e.g., Eleutherna). The interest in survey has also benefitted the Roman period, and material from this period now forms the basis for individual chapters in final publications as well as articles and conference presentations. The now much more abundant published material and greater number of scholars addressing Roman scholarship across the island have also led to the organization and publication of workshops and colloquia on the subject, which continue to this day. The number of Roman papers offered at the Cretological Congresses has increased, and a community of scholars working in diverse parts of Crete, on varying types of material and analyses, can now be said to exist. George's love of Crete, its past and present, and his tenacious desire to see Roman Cretan history and archaeology flourish, have been instrumental in developing what had formerly been a Minoan-adjacent appendage into a subject of legitimate and worthy pursuit that now thrives and regularly attracts new scholars from around the world.

The legacy of George's work is well on display in this volume. It combines the research of new scholars, some recently out of PhD programs where Roman Cretan subjects formed the focus of their dissertations and theses. They are building on this work, and now branching out to encompass and explore increasing amounts of data, assemblages, and sources. More established scholars working in a variety of fields are represented as well. Some of these are contemporaries — or just about — of George and, like him, undertook their research in relative isolation, within a small cohort of Roman Crete scholars. The wide range of George's research, especially *The Romans and Crete*, forms the background for much of these articles but also demonstrates the many possibilities for future scholarship.

2.

Introduction

Michael J. Curtis

The inspiration for this volume came from the 1st International Conference of the Colloquium on Roman Crete that was held at the University of Nottingham between 18-19 November 2016.[1] The selected theme of the conference, which was jointly sponsored by the Society for the Promotion of Hellenic Studies and the University of Nottingham, was '*The Enigma of Late Hellenistic and Roman Crete: Unanswered Questions*'. The conference brought together experts from five different countries, and over the two days the 14 presentations gave the audience an opportunity to hear about the new and exciting research into Hellenistic and Roman Crete.

Whilst it is correct to say that Hellenistic and Roman Crete continues to be an understudied area, this conference demonstrated that in recent years both our interpretation and perception of life on the island during these periods has begun to change as researchers have begun to look beyond the concept of Romanisation and focus more on the social and cultural identity and nature of the island's communities and their response to the challenges and opportunities of Roman rule. This was an important consideration when it came to determining the direction for this volume.

In acknowledging this change in our approach, the conference also provided an opportunity for reflection, looking back on the 34 years since the publication of I. F. Sanders' research into Roman Crete (1982), which at the time, reminded the academic world of this forgotten province and, in subtle way, threw down a challenge to do something about it! This challenge has taken a long time to be picked up and in the discussion sessions at the Nottingham conference it is fair to say that some regarded it as questionable as to whether the challenge had even been recognised.

This volume comes at an important turning point in Cretan Hellenistic and Roman Studies. As this volume marks a celebration of the career and contribution to Cretan studies by G. W. M. Harrison, it comes at a time when many of the other scholars who have also contributed to the enhancement of Sanders' vision of Roman Crete have either moved to new areas of research or have reached the point of retirement from the academic world. There is once more a need to stimulate interest and to encourage new researchers into this subject area to take forward the valuable work that has already been done. The fact that it is now possible to find undergraduate modules that explore Hellenistic and Roman Crete being taught in Universities, along with Summer Schools devoted to this topic, is testament to how much our knowledge, understanding, and confidence in the subject has grown since the 1980s. Published works such as G. W. M. Harrison's *The Romans and Crete* (1993), A. Chaniotis's *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (1999a), M. Livadiotti and I. Simiakaki's *Creta romana e protobizantina: atti del convegno internazionale (Iraklion, 23–30 settembre 2000)* (2004), R. J. Sweetman's *The Mosaics of Roman Crete. Art, Archaeology and Social Change* (2013), J. E. Francis and A. Kouremenos's *Roman Crete: New Perspectives* (2016), and the papers contained in W. G. Cavanagh and M. Curtis's *Post-Minoan Crete: Proceedings of the First Colloquium* (1998) form part of an invaluable corpus of foundation material which has advanced Sanders' research. This is further enhanced by the increasing number of national and international journal articles on topics related to Hellenistic and Roman Crete, along with some of the volumes in the BAR International Series such as H. A. Raab's study into *Rural Settlement in Hellenistic and Roman Crete. The Akrotiri Peninsula* (2001), and a new generation of specialised studies as seen in N. Coutsinas's *Defenses crétoises. Fortifications urbaines et défense du territoire en Crète aux époques classique et hellénistique* (2013) and S. Gallimore's *An Island Economy. Hellenistic and Roman Pottery from Hierapytna, Crete* (2015), which all together

[1] The idea of a colloquium on Roman Crete was first advanced in 2015. With an increase in the number of research projects for the post-Minoan period it was evident that the original concept of a single discussion group for the entire post-Minoan period was no longer viable and that a more effective approach would be to divide up the time span. The decision to launch a new group based on the Hellenistic, Roman and late-antique/Byzantine periods on Crete was announced in the spring of 2016 and the concept of a colloquium on Roman Crete was officially launched at the conference.

provide a corpus of information for both lecturers and students alike.

The passing of time has also brought changes within the research disciplines, and the Nottingham conference provided an opportunity to hear from Dr T. Theodoulou of the Ephorate of Underwater Antiquities about some of the important underwater discoveries from the waters around the island, and adding a new, and perhaps tantalising, dimension to the archaeology and history of Crete. The modern researcher also has the advantage of having access to a larger tool kit, as can be well illustrated by the advances and application of geoarchaeology and other sciences in the study of archaeological sites and contexts around the island. Acknowledgement should also be given to efforts that have been made in recent years to improve the quality and sustainability of digital information and databases, with projects like the Digital Archaeological Atlas of Crete (Sarris *et al.* 2002) and Archaeology in Greece Online, which is a jointly managed venture between the École française d'Athènes and the British School at Athens, providing new online resources for researchers.

Contextualising transition and change

The theme of this publication originated out of the Nottingham conference and a discussion on the impact and evidence of the Roman subjugation of the Greek city-states in the aftermath of the 69–67 BC military campaign and the resulting social and cultural changes. The conference participants were in general agreement that there would have been a period of adjustment and some changes, but could not reach a consensus on the scale, organisation, or the evidence that might relate to this and the length of time it may have taken. Taking this away and mulling over what had been said, it was clear that this conversation merited taking further. At the time it seemed that the key questions were centred around the behavioural processes of transition and change and that a way forward could be to discuss this in a volume of contributed papers where supporting evidence could be presented and discussed. This sounded like a good idea and looked quite impressive in the initial approach to the publishers and in the briefing note sent to the contributors, but the exercise has been more challenging than first thought and not for the most obvious of reasons.

Looking back over the notes from the 2016 conference, it was evident that there was one important flaw in the deliberations, namely that the post-67 BC changes had been considered to be a one-off event and that no consideration had been made to the possibility that the changes might have been part of a longer process, the origins of which predated the Roman military invasion. Not only had the wrong questions been asked, but no consideration had been made to the disparity and conflict between the archaeological and historical evidence, and the problems of the chronological framework for the Hellenistic and Roman periods.

The Cretan chronological framework, as in common with many other places, is heavily influenced by historical dates: the death of Alexander the Great in 323 BC marks the commencement of the Hellenistic period; the end of hostilities and the conquest of the island under the command of Quintus Caecilius Metellus in 67 BC heralds the arrival of the Roman period on the island; and Ammianus Marcellinus's earthquake of AD 365 brings a sudden end to the Roman period and the start of the late-antique/early Byzantine period. It is of course possible to find the occasional variation in these dates according to the respective author's personal and national preferences,[2] but generally, this is the framework on which we interpret and perceive life in these past times. In some situations, chronologies can generate automatic expectations of simultaneous change in the material culture, and this is something which is certainly encountered in Cretan archaeology. This expectation can get so strong that it blurs the vision, influencing the interpretation of the evidence, encouraging things to be seen that are not there and resulting in the evidence being put in the wrong box.

It would be wrong to suggest that this chronological dilemma is a new topic of conversation and, as discussed by S. Gallimore, it is clearly a matter of concern that needs to be addressed (2017: 107–110, 2019: 595–596). It is also a situation that is not unique to Crete and has been previously discussed for other parts of Greece (Alcock 1993: 217–219), where a useful resolution has been advanced by S. E. Alcock in *Graecia Capta* with the suggested combining of the Classical and early Hellenistic as a single period, and with a similar approach for the later Hellenistic and Roman periods (1993: 218). This application of an alternative chronology makes an interesting proposition and if this approach was to be adopted on Crete it might go some way to resolving the perplexing chronological conflicts that are met in the archaeology of these periods and enable the contextualisation of the periods of transition and change. It would also open the door to a different perspective of life on the island during these times, and one which seems better matched to the material evidence (**Figure 2.1**).

[2] As an example, the chronology in the Vrokastro survey report divides the Roman period into three parts: an early Roman period of AD 1–150, a middle Roman period between AD 150–425 and a late-Roman/early Byzantine period of AD 425–800 (Hayden *et al.* 2004: xxii), whilst at Knossos, excavated material has been set within a framework based on the ruling Roman emperors (Sackett 1992: xii–xiv).

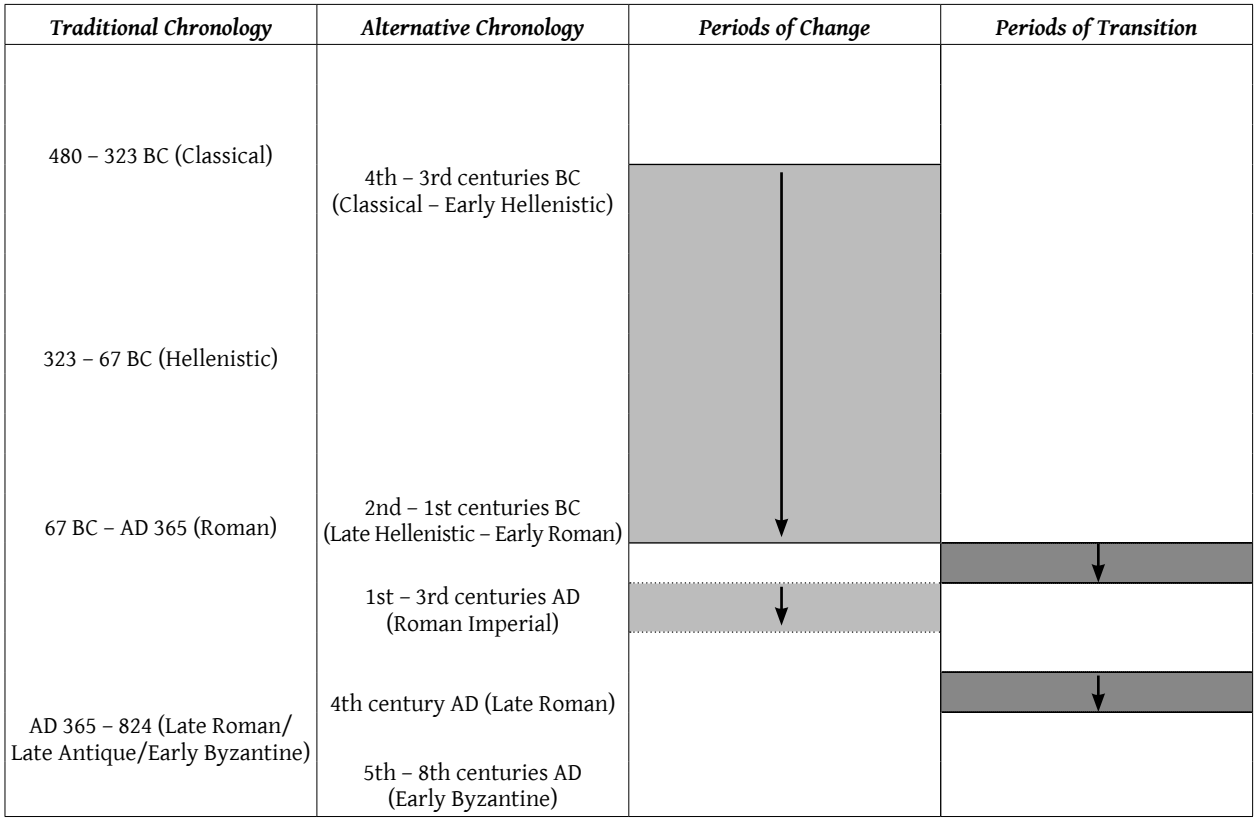


Figure 2.1. The traditional and alternative chronologies and periods of change and transition.

Appraising transition and change in the 2nd and 1st centuries BC (late Hellenistic/early Roman)

With more research data now becoming available it is perhaps time to reconsider our perspective of life on the island during the 2nd and 1st centuries BC. Traditionally Cretan society, culture, and life on the island during these times has come to be regarded negatively; 'a failure, both primitive and pirate-infested, aristocratic, Dorian ghetto, with nothing to recommend it beyond its ability to produce very effective mercenaries' (de Souza 1998: 112). If this was a true picture, then it is intriguing as to why Rome should have been so interested in Cretan affairs as far back as the 2nd century BC (Sanders 1982: 3). The availability of new data enables a more detailed examination of the economic and social changes that were taking place, and a closer look into the possibility that there was Roman involvement or influence in other areas of Cretan life beyond that of the political interventions that attracted the interest of the Roman historians prior to 69 BC.

The start of the 2nd century BC saw the continuation of a change process that had begun in the previous century. It was a complex change process affecting the political, economic, social, and cultural elements of Cretan society and was made up several phases, each of which were important in taking the overall process forward. The 2nd–1st centuries BC saw important changes as the micro-economies of the Cretan *poleis* became stronger and the importance of island-based currencies and social status increased (Stefanakis 1999). An important component in this economic development was the well-established market for the export of mercenaries to fight in foreign armies,[3] which by the 2nd century BC had developed into a sustainable service sector that not only generated regular revenue for the Cretans but which also resulted in new trading partnerships and political alliances.[4]

The opening of the 2nd century BC also saw important external changes with an increase in maritime activities throughout the Mediterranean world. With more ships sailing longer distances, new trading networks began to emerge, bringing new contacts that were both commercially and politically advantageous. Geographically, Crete was ideally located to benefit from this increase in cross-Mediterranean and inter-regional shipping, with the evidence showing that it

[3] P. Themelis makes the point that mercenaries from Eleutherna who had fought in the wars against Sparta in 222 BC returned with enough money to buy lands and acquire both economic and political status within their communities (2003: 17).

[4] During the Hellenistic period Cretan mercenaries were engaged to fight in Egypt, Syria, Sparta, the Achaian League, Pergamon, Macedonia, Syracuse, and Rome (Willetts 1965: 145–147). In Livy's account of Perseus' army in 171 BC, there is mention of a contingent of about 3000 Cretans and, whilst this may well be an overestimation, it gives a useful indication of the number of men leaving the island to fight overseas (Liv. 42.51).

brought the islanders new opportunities for trade, commerce, and of course, piracy. The island was set to become, as R. J. Sweetman describes, an *entrepôt* (2013: 12). Coincidentally at this time, more harbours and landing places emerge along the Cretan coastline as access to the sea became increasingly important for the *poleis*. New seaborne travellers came and went, spreading information about the island and making the presence of Roman officials, whether of a diplomatic or commercial nature, early in the 2nd century B.C. perhaps less conspicuous than it may seem when reading the narratives today.

The changes seen in the 2nd century continued into the 1st century BC, but with some notable differences. Whilst there was still demand for Cretan mercenaries, the market was slowing and less economically reliable as it had been in the past, driving a need to find alternative sources of revenue and silver coinage that could be overstruck. Whilst there is evidence to suggest that the Cretans were beginning to export more goods and materials,[5] this would have taken time to build up to a significant level, and this point may not have been reached until after the Roman conquest of the island when Roman and foreign expertise and investment was more readily available to help take this process to its next level (Marangou 1999: 270; Stefanakis 1999: 248–289; Sunderland 1942: 15; Tsatsaki and Nodarou 2014: 309–311; Viviers 1999: 229). Another reason that might account for the slowness in developing export capability relates to a problem of logistics and taxes in relation to the movement of goods across territorial boundaries in order to reach suitable harbours and a question of suitable berthing space around the coast as the quantity and size of the shipping orders got larger.

Nonetheless, these obstacles did not prevent Crete from quickly developing a reputation as a marketplace for goods and slaves (de Souza 2002: 61), and the island would have offered traders and merchants an opportunity for the exploitation of multiple trading marketplaces. Epigraphical evidence indicates the presence of resident migrant Italian traders and their families in cities such as Gortyn from the first half of the 1st century BC onwards (Bowsky 2002: 33), and their knowledge, skills, and expertise in the logistics of sourcing products and arranging their onwards sale would have been important assets within the community, perhaps even helping to locally progress or influence the development of the island's wine and olive oil industries. Even so, a commercial voyage to or past Crete must have come with risks, not least that of being boarded or attacked by pirates, a practice that may well have been more opportunist than strategic and reflective of the increasing impact of lost revenue from the mercenary sector as this decreased in size with the expansion of the Roman Empire.

The arrival of military forces on Crete in 69 BC and the subsequent couple of years of campaigning across the island still seems relatively invisible in island archaeology, and our understanding is dependent on the surviving accounts of elite Roman writers for their presentation of the historical facts (for example, the account of Cassius Dio [36. 17–19] of the military attacks on Eleutherna and Lappa). Whilst there is evidence of fire damage at Eleutherna which has been associated to the Roman attack (Cass. Dio. 36.18; Themelis 2009: 58), thus far there is little other evidence elsewhere and the obvious features that we would associate with a Roman military campaign, such as encampments, funerary monuments, and weaponry, have yet to be found, with perhaps the exception a few debatable instances where a direct association to the military campaign has been advanced (Gallimore 2019: 595–596). This is not to say that this evidence is not there, just that it has not really been sought. Whilst the evidence of the military intervention is rather thin on the ground, it was clearly of some significance at the time by the awarding Metellus a triumph in Rome in 62 BC, and these were not easy to obtain. Many of the smaller *poleis* and rural settlements seem to have been unaffected by the campaign, though undoubtedly they were aware of the fighting, but life in these areas seems to have continued much as usual at the time and beyond. With the lack of a significant change in the material evidence the grounds for determining the year of conquest as the start of new chronological period seems questionable. Instead, it is more appropriate to consider the chronological marker of 67 BC as the commencement of a phase of transition that would eventually deliver changes in the governance and administration of the island, in the economy, and influence society and culture throughout the island.

In the case of Crete, this transitional phase was drawn out and prolonged by the preoccupation of Rome with their Civil Wars. In the meantime, to all intents and purposes, life on the island seems to have remained the same for most people. Crete was certainly not ignored though, and the cities seem to have busied themselves engaging in fostering allegiances to the different sides as the island was looked upon as source of fighting men (Bowsky 2002: 26). The foundation of the *Colonia Iulia Nobilis Cnossus* around 27 BC (Paton 2004: 451) is an indication that Roman ambitions for the island were once more firmly engaged, and if M. W. Baldwin Bowsky is correct in her analysis of the political situation, it seems likely that initial efforts were concentrated on creating stability and control throughout central Crete before turning to sort out the other parts of the island (Bowsky 2002: 44).

[5] A. Chaniotis observes cypress wood for specific building projects, wine, 'Hadra vases', honey and herbs were amongst the exports from Crete during the Hellenistic period (1999b: 184, 207–210; Gallimore 2019: 602–606).

With the transitional phase being firmly traceable in the material evidence through the establishment of the *Colonia*, the question arises as to whether the last quarter of the 1st century, i.e., *c*. 27 BC onwards, when we also feel more assured of the administrative joining together of Crete and Cyrenaica as a senatorial province (Chevrollier 2016: 14), is better justified as the start of the Roman period? Whilst it is tempting to suggest this, there is an argument that the evidence to support this change is too localised and is not island-wide, and that there is a stronger case to be made for the commencement of the Roman period at the opening of the 1st century AD where there is widespread evidence of significant change of the type and scale which we would expect to see with the arrival of a new chronological episode across the island.

Build, build, build (Roman imperial)

For those readers living in the United Kingdom the phrase 'build, build, build' will be very familiar as a modern political statement used when there is a need to stimulate and grow the economy. The choice of this subtitle here is quite intentional as such a statement could have applied to Crete in the 1st century AD as new building and construction work sprang up everywhere. The Roman Imperial period had commenced with a bang, and the Cretan urban landscape saw systematic transformation and upgrading of its buildings and public services. It is possible that in parts of the island, particularly along the coast in western and central Crete, the commencement of the building programme was influenced by tectonic activity *c*. AD 66–100 (Di Vita 1986: 435–437, 1996: 49; Pirazzoli *et al.* 1992: 386), but this was a change process on an enormous scale, lasting for well over a century, as it fused together Greek and Roman culture and society. A good indicator of how much more cosmopolitan Crete quickly became over the course of the 1st and 2nd centuries AD can be seen in the variety of imported marble used in buildings, monuments, statutes, and sarcophagi, originating from quarries in countries such as Egypt, Africa, Asia Minor, mainland Greece and other Greek islands (Paton and Schneider 1999: 298–299). The shipment of this material was far less speculative than is seen with ceramics and it is reasonably safe to consider the presence of imported marble on Crete, as in other provinces in the Roman Empire, as being a response to a specific demand, delivered as part of a structured and organised process (Russell 2013: 5). In the context of an island such as Crete, from the point that the stonework arrived offshore there was a requirement for a working infrastructure to be in place so the stonework could be offloaded from the ship or barge and transported to either a stone yard or to its final destination, and this could mean a long haul over unfriendly terrain. This may seem like a simple, and rather obvious, statement, but changes were needed on the island so that all of this could happen. More work is needed on chronological mapping of this industry across the island, but it would have taken time to build the necessary supporting infrastructure

Figure 2.2. One of the challenges of chronological mapping for the stone industry is the vast amount of unstratified material, as seen here at Ierapetra in eastern Crete (photo by M. J. Curtis, 2019). The rights of the illustrated monuments belong to the Ministry of Culture and Sports (Law 4858/2021) and this deposition of stonework falls under the jurisdiction of the Ephorate of Antiquities of Lasithi. Ministry of Culture and Sports - Organisation for Management and Development of Cultural Resources (Hellenic Ministry of Culture and Sports/Hellenic Organisation of Cultural Development) (N.4858/2021).

and to have the resources in the right place, which makes it unlikely that this was feasible until the latter part of the 1st century AD, if not later (Paton and Schneider 1999: 290–291) (**Figure 2.2**). This is a good indication that the transformation of the urban areas was not something that was hurried and that it was spread over the best part of a century.

When did the Roman period actually come to an end?

In recent years there has been more interest over when and how the Roman period came to an end on the island. The earthquake of AD 365 is still linked in many people's minds as bringing the Roman period on the island to an abrupt end, but this interpretation, and indeed the dating of the attributed earthquake evidence on Crete, is open to interpretation (see S. Gallimore's article in this volume).[6]

On the basis of current knowledge, the 2nd and 3rd centuries were relatively stable and prosperous times on the island. The diverse population had become more nucleated and focussed on the main cities, especially those on the coast, and within these urban conurbations there were paved roads, single and double storey town house and villas, bath houses, theatres, piped fresh running water and drainage, and even fountains. It is not possible at present to say how far this level of prosperity extended across the social classes and our perspective is weighted in favour of the evidence of the wealthier citizens and residents. Towards the end of the 3rd century AD, and seventy years before the AD 365 earthquake, various changes began which would have eventually impacted on the islanders. Politically, for instance, between AD 295–297 Crete was separated from Cyrene and became an independent province within the diocese of Moesia (Gallimore 2017: 108; Sanders 1982: 6) as part of a much broader process of change that was to culminate in the division of the Roman Empire into two halves. To the islanders the impact of this political and administrative change, whilst not immediate, may well have been felt economically as, in the course of time, the trading networks and shipping routes changed (Gallimore 2015: 296–297). This resulted in different sailing patterns, a change in the demand for Cretan goods and a decline in business for some, but not all, of the island's harbours, particularly along the southern coast (Gallimore 2015: 296–297; Marangou 1999: 278).

However, whilst it is possible to view the latter part of the 3rd century and the opening of the 4th century AD as a period of transition, evidence from the cities and towns themselves shows little difference in the way of life (Sweetman 2013: 13), and the distribution of Cretan amphorae shows that the island was still a significant exporter, even if the focus of trading had shifted more towards the eastern Mediterranean (Gallimore 2016: 178–180).[7] Could the Roman Imperial period have ended during the latter part of the 3rd century–early 4th century without any major drama and without us really noticing? The answer could well be yes, and if this is the case then it allows us to look differently on the disaster that was to strike the island in AD 365.

The archaeological record shows that the traumatic event that we know as the AD 365 earthquake was certainly destructive and disruptive. Evidence from Kissamos, Eleutherna and Gortyn suggests that it may well have cause some displacement of the population as urban areas were abandoned, at least in western and central Crete (Harrison 1993: 319–321; Stiros 2010: 59; Stiros and Papageorgiou 2001; Themelis 2009: 69–71). The impact of the event is heightened in our minds by the discovery of human remains buried in the collapsed debris, such as the two groups of individuals found huddled together in a vain attempt to seek shelter as the buildings collapsed around them at Eleutherna (Themelis 2009: 69–70). The reality of the situation though is that our overall record of the number of deaths is currently suspiciously low, suggesting perhaps that the majority of the population had time to seek open ground and, if there had been a high death toll, then members of the community returned at some point after the secondary shocks had subsided and gathered the bodies that they knew of at the time and buried them in line with normal customs, as we might expect and in a similar fashion to what happens in instances of similar natural disasters today. The question arises though as whether proposing an earlier start date for the late-Roman period affects past archaeological interpretation, particularly in the case of previously classified late-Roman/late-antique burials. Only a reassessment of these burial groups can answer this, but could the solution for some our missing earthquake victims now lie within this group? It is an intriguing thought.

Whilst the scale of the damage was extensive, we must remember that the Cretans were used to living with tremors and earthquakes and it is no surprise that, as seen at Kissamos, communities were rebuilt, albeit away from the worst affected areas, and in a more restrained

[6] The advancement of scientific research has provided us with greater insight into the AD 365 earthquake and has raised questions as to whether the relative sea-level uplift in western Crete, and other changes in the coastal landscape, are actually later than has previously been thought (Mourtzas 2012; Mourtzas *et al.* 2016; Price *et al.* 2002; Stiros 2001 and 2010).

[7] Sanders suggested that Crete entered a period of decline in the late-3rd century AD (Sanders 1982: 30); however, there is now more evidence available which seems to show that there was sustained economic activity throughout this period and into the 4th and 5th centuries AD, with renewed interest in agriculture in some parts of the island (Sweetman 2013: 22).

and conservative manner (Stiros and Papageorgiou 2001: 387–388; Sweetman 2013: 98–99). At Eleutherna, for instance, the rebuilding programme utilised what it could of the surviving buildings, levelled the ground over badly damaged areas and constructed new houses (Themelis 2009: 80), as daily life returned to a degree of normality with the recovery period lasting into the beginning of the 5th century AD.

The end of the 4th century and the opening of the 5th century on the island sees more social and cultural change on the horizon, and with the vestiges of the Roman period left behind this is another distinctive chronological change as the early Byzantine era comes into view.

In summary, it is increasing evident that there are times when the material evidence just does not fit in with the traditional Cretan chronology. This is especially prevalent in the 3rd–1st centuries BC and again in 4th century AD. The proposal of an alternative chronology which recognises and accommodates the processes of transition and change offers a new, and different, perspective and one which is more in line with the material evidence. Whilst this is a personal vison, I hope it offers the basis for further discussion and something which other researchers can build on and take forward.

Bibliography

Primary Sources

Cassius Dio. *Roman History*, Vol. 3: Books 36–40. Translated by E. Cary. Loeb Classical Library 53. Cambridge: Harvard University Press, 1969.

Livy. *The History of Rome,* Book 42. Translated by Rev. Cannon Roberts. New York: E.P. Dutton and Co., 1912.

Secondary Sources

Alcock, S.E. 1993. *Graecia Capta: The Landscape of Roman Greece*. Cambridge: Cambridge University Press.

Baldwin Bowsky, W.M. 2002. Reasons to reorganize: Antony, Augustus, and central Crete. *Electrum*, 6: 25–65.

Cavanagh, W.G. and M. Curtis (eds) 1998. *Post-Minoan Crete. Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College, London, 10–11 November 1995* (British School at Athens Studies 2). London: British School at Athens.

Chaniotis, A. (ed.) 1999a. *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29). Stuttgart: Franz Steiner Verlag.

Chaniotis, A. 1999b. Milking the mountains: economic activities on the Cretan uplands in the Classical and Hellenistic period, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 181–220. Stuttgart: Franz Steiner Verlag.

Chevrollier, F. 2016. From Cyrene to Gortyn. Notes on the relationship between Crete and Cyrenaica under Roman domination (1st century BC – 4th century AD), in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 11–26. Oxford: Oxbow Books.

Coutsinas, N. 2013. *Défenses crétoises. Fortifications urbaines et défense du territoire en Crète aux époques classique et hellénistique* (Cahiers archéologiques de Paris I, n°3). Paris: Publications de la Sorbonne.

De Souza, P. 1998. Late Hellenistic Crete and the Roman conquest, in W.G. Cavanagh and M. Curtis (eds) *Post-Minoan Crete. Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College, London, 10-11 November 1995* (British School at Athens Studies 2): 112–116. London: British School at Athens.

De Souza, P. 2002. *Piracy in the Graeco-Roman World*. Cambridge: Cambridge University Press.

Di Vita, A. 1986. I terremoti a Gortina in età romana e proto-bizantina. Una nota. *Annuario della scuola archeologica di Atene e delle missioni italiane in Oriente* 57–58 [1979–1980]: 435–440.

Di Vita, A. 1996. Earthquakes and civil life at Gortyn (Crete) in the period between Justinian and Constant II (6–7th century AD), in S.C. Stiros and R.E. Jones (eds) *Archaeoseismology* (Fitch Laboratory Occasional Papers 7): 45–50. Athens: IGME/British School at Athens.

Francis, J.E. and A. Kouremenos (eds) 2016. *Roman Crete: New Perspectives.* Oxford: Oxbow Books.

Gallimore, S. 2015. *An Island Economy. Hellenistic and Roman Pottery from Hierapytna, Crete*. New York: Peter Lang.

Gallimore, S. 2016. Crete's economic transformation in the late Roman Empire, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 175–188. Oxford: Oxbow Books.

Gallimore, S. 2017. Abandonment and assimilation in the Roman period, in L.V. Watrous, D.M. Buell, E. Kokinou, P. Soupios, A. Sarris, S. Beckmann, G. Rethemiotakis, L.A. Turner, S. Gallimore, and M.D. Hammond, *The Galatas Survey. Socio-Economic and Political Development of a Contested Territory in Central Crete during the Neolithic to Ottoman Periods* (Prehistory Monographs 55): 103–117. Philadelphia: INSTAP Academic Press.

Gallimore. S. 2019. An island in crisis? Reconsidering the formation of Roman Crete. *American Journal of Archaeology* 123.4: 589–617.

Harrison, G.W.M. 1993. *The Romans and Crete*. Amsterdam: Afolf M. Hakkert.

Hayden, B., H. Dierckx, G. Harrison, J. Moody, G. Postma, O. Rackham and A. Stallsmith. 2004. *Reports on the Vrokastro Area, Eastern Crete*, Vol. 2: *The Settlement History of the Vrokastro Region from the Final Neolithic through the Early Modern Periods, with Supplementary Studies* (University Museum Monograph 119). Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology.

Livadiotti, M. and I. Simiakaki (eds) 2004. *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, 3 vols. Padua: Bottega d'Erasmo, A. Ausilio.

Marangou, A. 1999. Wine in the Cretan economy, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 247–268. Stuttgart: Franz Steiner Verlag.

Mourtzas, N. 2012. Fish tanks of eastern Crete (Greece) as indicators of the Roman sea level. *Journal of Archaeological Science* 39: 2392–2408.

Mourtzas, N., E. Kolaiti and M. Anzidei. 2016. Vertical land movements and sea level changes along the coast of Crete (Greece) since the late Holocene. *Quaternary International* 401: 43–70.

Paton, S. 2004. Knossos: an imperial renaissance, in G. Cadogan, E. Hatzaki, and A. Vasilakis (eds) *Knossos: City, State* (British School at Athens Studies 12): 451–455. London: British School at Athens.

Paton, S. and R.M. Schneider. 1999. Imperial splendour in the province: imported marble on Roman Crete, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 247–268. Stuttgart: Franz Steiner Verlag.

Pirazzoli, P.A., J. Ausseil-Badie, P. Giresse, E. Hadjidaki and M. Arnold. 1992. Historical environmental changes at Phalasarna harbor, west Crete. *Geoarchaeology* 7.4: 371–392.

Price, S., T. Higham, L. Nixon and J. Moody. 2002. Relative sea-level changes in Crete: reassessment of radiocarbon dates from Sphakia and west Crete. *Annual of the British School at Athens* 97: 171–200.

Raab, H.A. 2001. *Rural Settlement in Hellenistic and Roman Crete: The Akrotiri Peninsula* (British Archaeological Reports International Series 984). Oxford: Archaeopress.

Russell, B. 2013. *Economics of the Roman Stone Trade.* Oxford: Oxford University Press.

Sackett, L.H. (ed.) 1992. *Knossos from Greek City to Roman Colony: Exacavations at the Unexplored Mansion* II (The British School at Athens, Suppl. 21). London: Thames and Hudson.

Sanders, I.F. 1982. *Roman Crete. An Archaeological Survey and Gazetteer of Late Hellenistic, Roman and Byzantine Crete.* Warminster: Aris and Philips.

Sarris, A., K. Bichta, M. Giasta, A. Giourou, E. Karimali, V. Kevgas, K. Margetousakis, E. Peraki, S. Soetens, K. Tzaneteas, S. Topouzi and A. Tripolitsiotis. 2002. A web-based digital archaeological map of Lasithi, E. Crete, in G. Burenhult and J. Arvidsson (eds) *Computer Applications and Quantitative Methods in Archaeology. Proceedings of the 29th Conference, Gotland, April 2001* (British Archaeological Reports International Series 1016): 309–324. Oxford: Archaeopress.

Stefanakis, M. 1999. The introduction of coinage in Crete and the beginning of local minting, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 247–268. Stuttgart: Franz Steiner Verlag.

Stiros, S.C. 2001. The AD 365 earthquake and possible seismic clustering during the fourth and sixth centuries AD in the eastern Mediterranean: a review of historical and archaeological data. *Journal of Structural Geology* 23: 545–562.

Stiros, S.C. 2010. The 8.5+ magnitude, AD 365 earthquake in Crete: coastal uplift, topography changes, archaeological and historical signature. *Quaternary International* 216: 54–63.

Stiros, S.C. and S. Papageorgiou. 2001. Seismicity of western Crete and the destruction of the town of Kisamos at AD 365: archaeological evidence. *Journal of Seismology* 5: 381–397.

Sunderland, C.H.V. 1942. Overstrikes and hoards. *Numismatic Chronicle*: 1–18.

Sweetman, R.J. 2013. *The Mosaics of Roman Crete. Art, Archaeology and Social Change.* Cambridge: Cambridge University Press.

Themelis, P.G. 2003. *Ancient Eleutherna. East Sector*. Athens: Archaeological Receipts Fund.

Themelis, P.G. (ed.) 2009. *Ancient Eleutherna: Sector 1*, Vol. 1. Athens: Scripta.

Tsatsaki, N. and E. Nodarou. 2014. A new Hellenistic amphora production centre in west Crete (Loutra, Rethymnon): study and petrographic analysis of the pottery assemblage. *Annual of the British School at Athens* 109: 287–315.

Viviers, D. 1999. Economy and territorial dynamics, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 221–233. Stuttgart: Franz Steiner Verlag.

Willetts, R.F. 1965. *Ancient Crete. A Social History*. Bristol: Routledge and Kegan Paul.

3.

The Export of Whetstones from Hellenistic Crete

Nicholas Victor Sekunda

Introduction: Export of whetstones from Hellenistic Crete

It seems to be common modern opinion that, during the Hellenistic period, the activities of Cretan pirates prevented maritime trade between Crete and the rest of the Mediterranean world. I take as my example, somewhat invidiously, a quotation from A. J. N. Wilson, *Emigration from Italy in the Republican Age of Rome*, a book which I have otherwise found most useful in gathering evidence for this article. Wilson states (1966: 146):

> Although the merchants of Italy were adventurous, the organized piracy of the Cretans and their internal wars may account for the absence of any evidence for trade and settlement till the defeat of the pirates and the pacification of the island in 68/67 B.C. Military veterans — from the forces used in 68/67 or left to help control Crete afterwards — soon began to settle. Civilian settlers come to light first under the Principate, at Gortyn. Crete probably gained in commercial importance from the Augustan age, with the growth of trade between Italy and the ports of Egypt and Syria. In this natives of Campania, especially Puteolans (though merchants at Puteoli tended more and more to originate from the East), must have retained a part. So the Granii active in Crete in the first century A.D. are presumably connected, if remotely, with the great Puteolan Granii of the previous century, who already traded from one end of the Mediterranean to the other.

A number of literary texts, let alone the archaeological evidence, prove that external trade, in fact, was conducted, as we have good evidence that at least whetstones were exported from the island to Italy in the Hellenistic Period. The main evidence for this trade comes in the following two passages in Pliny's *Historia Naturalis*, which I quote using the translations of H. Rackham and D. E. Eichholz respectively in the Loeb edition:

> Mowing was also a more expensive operation in former days, when only Cretan and other imported whetstones were known, and these would only liven up the blade of a scythe with the help of olive oil; and consequently a man mowing hay used to walk along with a horn to hold the oil tied to his leg (Pliny, *HN* 18.67.261).

> And now it is time to pass on to stones used in industry, and first of all to whetstones intended for sharpening iron. Of these there are many varieties. Cretan whetstones for long enjoyed the highest reputation, the second place being held by the Laconian from Mount Taygetus. Both kinds used to be lubricated with oil (Pliny, *HN* 36.47.164).

The picture Pliny gives us, then, is that 'in former days' only Cretan and other imported whetstones were used in Italian agriculture. Although Italy may have imported some from other places in the eastern Mediterranean, Cretan whetstones 'for long enjoyed the highest reputation' and one presumes that most whetstones were imported from Crete, and over a considerable stretch of time. Cretan whetstones are also referred to in a passage in Athenaeus (7. 327 F) which informs us that there 'is also a type of stone called bream (*φάγρος*). For the whetstone is called bream by the Cretans, as Simias says'. One can identify the Simias quoted by Athenaeus as Simmias the 3rd century BC Rhodian grammarian (Maas 1927). It follows, therefore, that Cretan whetstones were famous outside of Crete, and therefore that they were exported, though not necessarily to Italy, as early as the 3rd century.

Pliny completed his *Historia Naturalis* in AD 77 (Rackham 1958: viii), and it is difficult to be sure how far back in time his 'former days' could be placed; however, a further literary source allows us to put this period as far back as early as at least the first half of the 1st century BC. A passage taken from the late-Republican jurist Alfenius (or Alfenus) Varus (Klebs 1894) is preserved in the Digest at XXXIX 4.15 (Mommsen 1870: 406), which involves a restriction on the export of whetstones (*cotes*) from the island of Crete after the Ides of March imposed by Julius Caesar, and a subsequent adjudication by him over the case of a ship loaded with them which set off

before that date, was blown back into port, and set off again after the Ides.

> *Alfenius Varus libro septimo digestorum. Caesar cum insulae Cretae cotorias locaret, legem ita dixerat: 'ne quis praeter redemptorem post idus Martias cotem ex insula Creta 'fodito neve eximito neve avellito'. Cuisdam navis onusta cotibus ante idus Martias ex portu Cretae profecta nento relata in portum erat, deinde iterum post idus Martias profecta est. Consulebantur, num contra legem post idus Martias ex insula Cretae cotes exisse viderentur. Respondit, tametsi portus quoque, qui insulae essent, omnes eius insulae esse viderentur, tamen eum, qui ante idus Martias profectus ex portu essent et relatus tempestate in insulam deductus esset, si inde exisset non videri contra legem fecisse, praetera quod iam initio evectae cotes viderentur, cum ex portu navis profecta esset.*

When Caesar leased the whetstone quarries on the island of Crete, he laid down the following rule: 'After the Ides of March, nobody except a lessee is to excavate, remove, or take away any whetstone from the island of Crete'. A ship belonging to a certain individual set out from port in Crete before the Ides of March loaded with whetstones but was driven back to port by the wind and later set out again after the Ides of March. Advice was sought as to whether the whetstones should be considered to have been illegally exported after the Ides of March. He replied that although all the ports which are in an island are held also to belong to that island, nonetheless, a person who set out from port before the Ides of March and was carried back to the island by a storm should not be held to have broken the law if he then left again, the grounds being that the whetstones should be considered to have been exported at the outset, since the ship also left port then (Alfenius Varus, *Digest* Book 7).

I have used the translation of Watson (1985).[1] The passage could be understood in various ways. In the opinion of Boris Rankov (1999: 118, n. 24) 'the whole thing looks like a hypothetical'. If not, then at first glance it might be thought from the reference to ships not sailing from Crete after the Ides of March, that the prohibition might have had something to do with the ancient 'sailing season'. It used to be thought that the ancients were reluctant to put to sea from November to March, but research has invalidated this concept of a 'closed season' for sailing (Beresford 2013: 1–7, with the review of Stronk 2013; Rougé 1952; Simonsen 2003). Even if the whole concept of a closed sailing season were valid, the prohibition for sailing from Crete should have been before the Ides of March, not after.

Caesar could have enacted this legislation at almost any point in his political career when he held significant office. The death of Caesar in 44 BC obviously constitutes a *terminus ante quem*. I have found no reference to this law passed by Caesar in any of the secondary literature dealing with Roman law or the career of Julius Caesar. Perhaps the best way to understand the passage is to guess that the legislation was enacted shortly after the Roman conquest of the island in 67 BC. In the ancient world the ownership of mineral resources was the prerogative of the state as 'long-established modern orthodoxy holds'.[2] On the conquest of the island, the right to lease out mines on the island would fall to Rome, rather than the formerly independent Cretan city-states. The working of mines in the Roman provinces was let out to contractors (Stevenson 1939: 113). The reorganisation of Crete as a Roman province was carried out by Q. Caecilius Metellus Creticus in 66 BC when he held the office of Proconsul.[3] In 65 BC Caesar held the office of *aedilis curulis* (Broughton 1952: Vol. 2, 158) which gave him the right to exercise jurisdiction in market disputes (Kunkel 1973: 18). This might be an appropriate time to place the legislation mentioned by Alfenius Varus. Presumably the letting out of mining rights to contractors would be carried out at the beginning of 65 BC, when Caesar had held office. The Ides of March was set as the last date before which (the largely Italian) merchants who had not taken out a lease from the Roman authorities would be allowed to operate.

If the export of whetstones from Crete had only begun after the Roman conquest of the island in 67 BC, it is difficult to understand how Pliny could say that Cretan whetstones 'for long enjoyed the highest reputation' in Italy. It is surely more probable that the export of Cretan whetstones was begun in the middle of the 2nd century BC, when demand for whetstones grew due to changes in Italian agriculture, and when supply was eased because of the activity of Italian merchants in the Aegean, specifically after the establishment of Delos as a free-trade port after the end of the Third Macedonian War.

In the latest catalogue of Roman wrecks containing stone cargoes compiled by Ben Russell, whetstones are, admittedly, absent (Russell 2013: 332–341), but very few wrecks indeed have been dated to the period 200–100 BC (Russell 2013: 346, fig. 3). Furthermore, the compilers of the list were looking for cargoes of marble and other materials used for sculpted products, as well as the finished objects themselves, rather than smaller items of lesser value.

[1] Excepting that Wilson translates *cotes* as 'flints', which I have rendered as 'whetstones'.

[2] See the discussion in Whitehead (2019: 169), perhaps supported by Xenophon (*Poroi* 1.3) referring to 'land with silver beneath'.

[3] The sources are given in Broughton (1952: Vol. 2, 154); Cic. *Flac.* 30.100; Cic. *ad Brut.* 1.8; Livy *Per.* 100; App. *Sic.* 6; Just. 39.5.3; Ruf. Fest. 7.1; Solin. 23.2; see also Strabo 17.3.25.

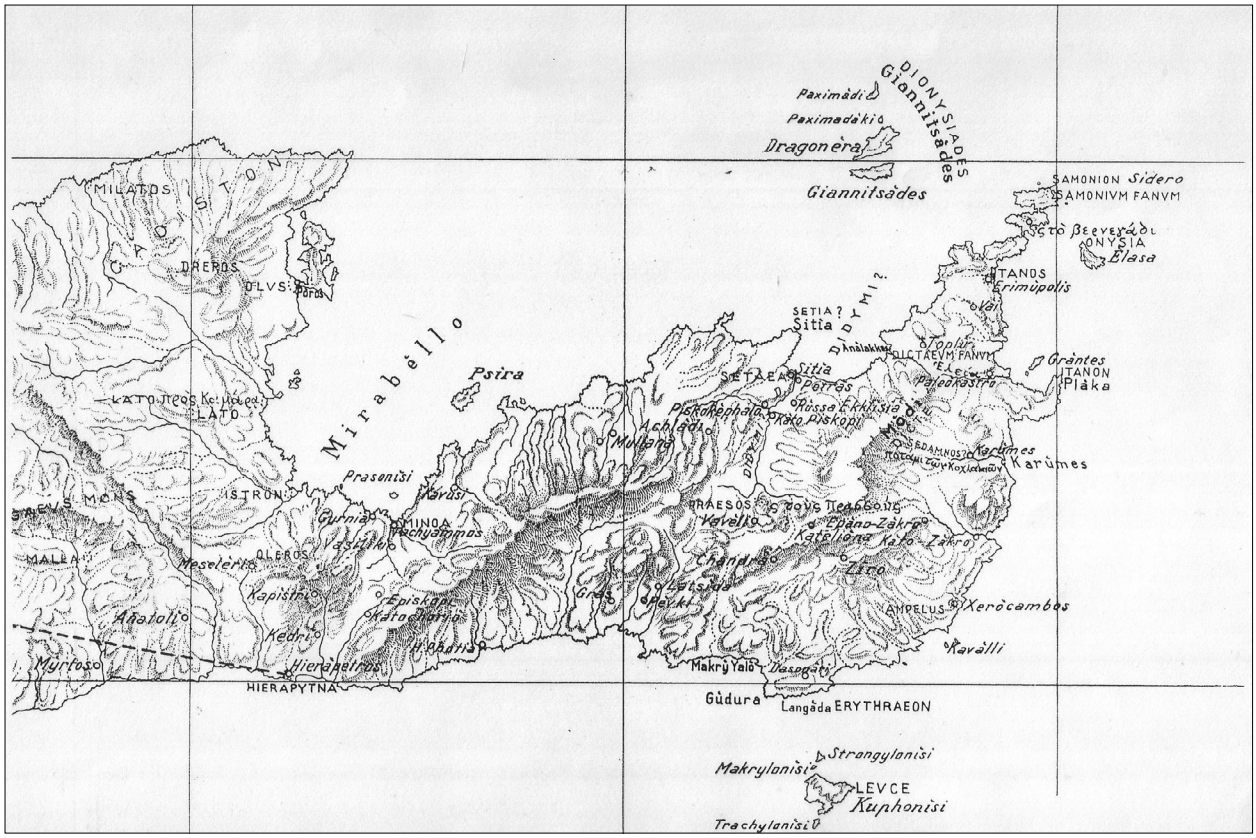


Figure 3.1. The cities of eastern Crete (after *IC* I).

The first significant wave of Italian settlement on the island, or rather Roman settlement, for the Italians had been given Roman citizenship following the Social War of 91–88 BC, seems to have come following the conquest of the island in 67 BC (Baldwin Bowsky 2001). This does not preclude, however, the presence of a more limited number of Italian *negotiatores* on the island in the 2nd century BC, pursuing the new trading opportunities in the Aegean opened up by the projection of Roman presence in the area.

Perhaps the earliest Cretan inscription to refer to Italians resident in the island is a list Greek and Italian names found at Gortyn (*IC* IV.400). The inscription was found near the Odeion and thus comes from the administrative centre of the city, making it in all likelihood an official document. Three Italian names *[--]υμος Καικιλιου*, *[--]ύλλιος Γέτας*, *[--]ιλιος Κέλερ*, in all probability the names of Italian *negotiatores*, occur in lines 7–9 of the same inscription. The inscription is dated by the letter-forms to the first half of the 1st century BC.

The Annii: Italian *negotiatores* based in Olous

There are only two places in Crete in which appropriate stone for whetstones can be quarried. One is in the Sphakia, and the other is at Elounda (Raulin 1869: I, 271; II, 463). Elounda, the ancient Olous, from which the modern town takes its name, lies on the eastern coast of central Crete, north of the modern city of Agios Nikolaos (**Figure 3.1**). The southern coast bordering on the Sphakia is poorly supplied with natural harbours. The port at Phoinix-Loutro was developed only at some point in the late-1st century BC into a major harbour (Francis 2017: 513). Elounda, on the other hand, lies at the head of a very large natural bay, on an isthmus between the mainland and a peninsula, where the ancient city was situated. At the mouth of the bay is a small island, fortified in the Venetian period, and called Spinalonga.

The peninsula is also frequently called Spinalonga, especially in the relevant archaeological literature, which is largely Italian, but this seems to be based on a misunderstanding. Spinalonga means ‘long thorn’ in Italian, which would be highly appropriate for a spiny-shaped, thorn-clad, elongated, peninsula, but the word has a completely different derivation. In late-antique sources the name Olous has already become corrupted to Alyngos (Blackman 1976: 645) and later on to Elounda. The toponym Spinalonga is a corruption of the early modern Greek words *‘stin Elounda’*, ‘towards Elounda’ (Spanakis 1993: 736) and, is properly applied solely to the island at the mouth of the bay. The peninsula, and the small islet lying to the west of it facing the gulf of Mirabello, are both called Kolokythia ‘marrow’, by the present-day local inhabitants. In this article, however,

Figure 3.2. View eastwards from the Oxa massif out over Elounda Bay, the Spinalonga Peninsula (middle distance) and the Bay of Mirabello (far distance): the islet of Kolokothia is at the top right; the church and hamlet of Aghios Ioannis and the height of Orthipetra lie in the last bulge of the Spinalonga Peninsula, to the far left (photo by N. Sekunda).

I have continued with the established archaeological practice of (falsely) calling the peninsula Spinalonga too.

Elounda bay, and the whole of the territory of the ancient city of Olous, was divided off from the interior of Crete, and the territory of the ancient city of Dreros by the mountain massif of Oxa. The rock from the Oxa mountains, which overlook the enclosed bay where Elounda is situated, has continually been used for quarrying whetstones from antiquity down to modern times.[4]

The Spinalonga peninsula is one of the few places in Crete where a large number of inscriptions and rock-art has been carved into the natural rocks.[5] The archaeological material from the Spinalonga peninsula was first gathered by Oliverio (Contuli), subsequently published by Guarducci in 1935 (*IC* I.xxii.64*a*–*r*), and augmented by Van Effenterre (1949). The rock carvings recorded include representations of ships, animals, a number of images of feet, either depicted singly, or in pairs, sometimes accompanied by inscriptions.

The significance of the image of a carved foot, or rather feet, because the image more normally comes in matching pairs, along with its accompanying inscription, is disputed. Many of these images occur at sacred sites, and so, if the 'footprints'—more properly the carved outlines of feet—are accompanied by the name of the local deity, they are generally interpreted as recording an epiphany of that deity. If the 'footprints' are accompanied by the name of a mortal, they are, on the contrary, interpreted to record the visit of a pilgrim to the shrine. However, 'in the Graeco-Roman world, the two customs appear to have merged, and the distinction between divine and human footprints is frequently not made clear' (Dunbabin 1990: 88–90). This is the way in which Margherita Guarducci (1942–1943: 310–311) interpreted the material from the Spinalonga peninsula:

> sono le impronte di piedi nudi o calzati lasciate da alcuni pellegrini in certe località delle Creta settentrionale, e precisamente sulle rocce della peninsula di Spinalonga presso Olunte nelle vicinanze di un antica santuario.

[4] When I first visited Elounda in the second half of the 1970s, I witnessed whetstones being cut from the mountainside, loaded into panniers carried by donkeys, and carried down to the town. What a pity I did not have my camera with me at the time.

[5] A second major concentration is on the rocks around the sanctuary of Athena Samonia near Itanos in east Crete.

It is difficult to see which nearby ancient sanctuary Guarducci could have had in mind. The nearest temple would have been situated at the isthmus of the Spinalonga peninsula, where the ancient city of Olous lay. Although the possibility that the whole of the Spinalonga peninsula constituted some kind of 'sacred landscape' should also not be ruled out completely, it is surely more probable that the Spinalonga carvings were executed more casually and did not have a deeper religious meaning. I stress 'more casually', for it should be borne in mind that the carvings are not merely scratched on the surface rock; otherwise, they would not have survived for two thousand years. Someone would have had to carry a hammer and chisel to the place where the inscription was being left; these carvings are thus not idle graffiti.

At the place called Orthipetra on the Spinalonga peninsula, representations of feet were carved onto the rock in two places, in both cases accompanied by the personal name Annius (Ἄννιος) in the genitive, indicating that these feet belonged to the individual mentioned. Although in both cases written in Greek script, the name is not Greek, but Italian, used by Italians belonging to the *gens Annii* (Pape, Benseler 1884: 92 'der röm. Name Annius'). This personal name should not be confused with the separate name Annaeus, transcribed as Ἀνναῖος in Greek, which is the name of another Italian *gens*. The name is sometimes spelt with one letter *n* as Anius, but it is probable that the commoner form Annius is the correct one. It is listed as such in Solin and Salomies (1988: 16; also Tataki 1996: 107, n. 14). This form also appears in an epigram of Martial (7.48) mentioning the wealth of one Annius, although Galán (2002: 301) does not consider that the epigram is directed at a specific person, 'the addressee is a generic one'. Martial would presumably have spelt the name in its correct Italian (Latin or Oscan) form.

In one place at Orthipetra (*IC* I.xxii.64m; **Figure 3.3**) the name is completely preserved and accompanied by representations of four feet. In the another separate inscription (*IC* I.xxii.64f; **Figure 3.4**) located at the house of Ioannis Mathiakis also at Orthipetra — now deserted, as is practically the whole of the Spinalonga peninsula —, the name has been only partially preserved and is restored, however, as Ἀννί[ου ?, enclosed within the drawing of a foot. In both cases, when visiting the Spinalonga peninsula in 1990 and 1991, I was unable to locate either inscription, despite substantial effort. There is no way that either inscription can be confidently dated. In the *Lexicon of Greek Personal Names* (Vol. 1, 42, no. 1) inscription m, the first one to be mentioned here, is dated as 'Imperial' with a question mark. A third occurrence of the name in the Spinalonga peninsula, previously unrecorded, is discussed in an appendix to this article.

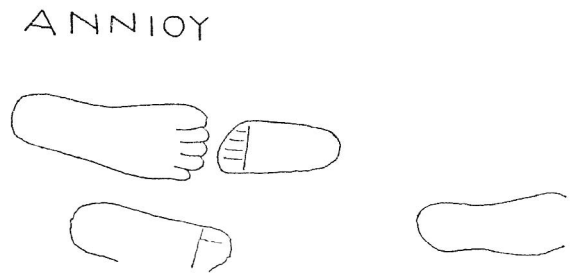


Figure 3.3. Rock carving on the Spinalonga Peninsula (after *IC* I.xxii.61f).

Figure 3.4. Rock carving on the Spinalonga Peninsula (after *IC* I. xxii.61m).

It is quite possible that an Italian visitor to the city of Olous could have followed local practice and left his name carved on the rocks. That his stay in the city was on a more long-lasting basis is, however, suggested by another inscription discussed in the following paragraph.

A number of local people have told me of the existence of an inscription carved in Latin letters recording the name Copranna, though I have not been able to locate it in any of my visits to the site. The personal name Copranna is connected with the Greek word *kopros* meaning 'excrement' and is best explained as a derogatory-protective name, thus 'when a woman has had trouble conceiving a child, or has had a number of children die in infancy, she will name a new baby something negative in order to ward off the evil eye and thereby ensure the survival of her child' (Hobson 1989: 164, nn. 15, 16; also Masson 1996: 260–263 [= Masson 2000: 260–263]; Pomeroy 1986: 147–162). Copranna was presumably a local girl whom a Latin speaking and writing *negotiator* based in Olous had fallen in love with. This individual might have been none other than the Annius who had left his name on the rocks at Orthipetra.

An inscribed grave stele erected in memory of two females, Epicharis daughter of Eutyches — or Eutychos, preferred by the *LGPN* (Vol. 1: 186, no. 10) — and Annia daughter of Annios, has also been recovered from Olous (precise location unknown) in 1940 (*SEG*

23.555). Davaras pointed out that the names Annios and Eutychos are both found carved on the rocks of the Spinalonga peninsula at Orthipetra, the latter in the form Εὔτυ[χος] (*IC* I.xxii.64a). He also quite plausibly dated the stele to the 2nd or 3rd century AD on the basis of the letter-forms (Davaras 1963: 157–158, no. 11, pl. 69a), a dating which has been followed by the *Lexicon of Greek Personal Names* (Vol. 1: 42, no. 2). Given that the name Annios only occurs on Crete at Olous, it would be reasonable to assume that Annia and her father Annios are descendants of the persons called Annios found in the inscriptions from Orthipetra on Spinalonga, which are certainly earlier, and which, again, would confirm that persons called Annios were permanently settled at Olous. There is no particular reason to think that Annios was settled on the Spinalonga Peninsula itself, rather than in the ancient city of Olous. Italians in Greece in general settled in the towns, not in the countryside (Wilson 1966: 13).

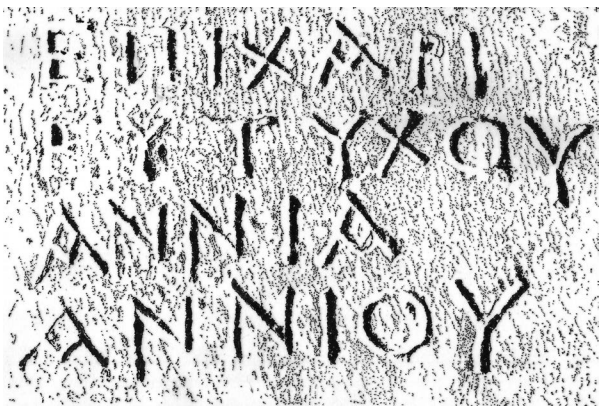


Figure 3.5. Drawing of the squeeze of the inscription SEG 23, 1968, 555, after Davaras AD 18, 1963, A, pl. 69a (Author).

Whilst Olous was one of the smaller coastal city-states of Crete, it was sufficiently economically developed to issue its own coinage from *circa* 330 BC onwards, and this might have been necessitated by the trade passing through its harbour, Whilst it is hardly strange that an individual belonging to the *gens Annia* should choose to settle there, I suggest that he did so as an Italian *negotiator*, engaged in the purchase of whetstones to be exported to Italy, and that this occurred at the middle of the 2nd century BC. I make this suggestion aware of the difficulties surrounding the precise meaning of the term *negotiator* (Wilson 1966: 4–6).

The involvement of the *Annii* in Aegean Trade

For statistical purposes ancient cargoes can be divided into six types: amphorae, metal, pottery, stone, tiles/pipes, and other cargo. Stone is a relatively heavy cargo. In antiquity, it seems to have been normal to have sailed with mixed cargoes rather than bulk cargoes. In a study of the cargoes of 718 ancient wrecks, only in one case did stone constitute more than 10% of the cargo. Parker (1984: 102–104, 133, fig. 7) has stated that a 'good deal of transhipment and harbourside dealing is implied, in order to make up cargoes.' Whetstones would have constituted a cargo type of a low stowage factor, as a cubic metre of stone would have occupied only about half a cubic metre of cargo space and could have been loaded as a 'saleable ballast', to improve stability and trim of the ship (McGrail 1989: 353–358).

It is reasonable to assume that, in order to cut time and effort spent in loading and unloading, ballast was loaded at the port of departure. If ships sailed direct from Olous to Italy, they would have to mix the cargo loaded onboard ship at Olous with some other, lighter, produce. This could have taken place at Olous, but there are a multitude of other possibilities. They could, for example, have mixed the whetstones with Cretan agricultural produce, but we have no evidence for this. On the other hand, we know that after 166 BC the island of Delos flourished as an entrepôt, with a thriving community of Italian merchants and bankers engaged in the purchase and shipping of commodities from the Greek world to Italy. It seems that 'most cargoes were assembled at a series of ports of call or from goods collected at an entrepôt' (Parker 1990: 343). I would therefore like to suggest that, on balance, it seems more probable that ships visiting Olous first part-loaded at Delos with lighter cargoes, before sailing south to Olous to load on the whetstones, and from there began the journey back to Italy along the north coast of Crete. This would have involved unloading the lighter cargoes first, loading on the whetstones in the bottom of the hull, and then loading back the lighter cargoes. During the period from mid-March to mid-September, the prevalent winds are from the north,[6] and, if the ships had part-loaded at Olous first, they would have then had to sail practically due north to Delos. One notes that the passage taken from the late-Republican jurist Alfenius (or Alfenus) Varus (Mommsen 1870: 406; see above) concerns a ship loaded with whetstones that set out from Crete before the Ides of March and was blown back into the island.

In some cases, the ship's owner was also the merchant who owned the cargo, but in most cases the merchants and shippers seem to have been different persons (Parker 1990: 339). This may also have been the case with the ships carrying whetstones from Crete to Italy. The assembling of mixed cargoes yielding maximum profits in Italy, the hiring of ships, and the sale of goods in Italy must have been a highly complicated business, which we barely understand today. I would assume, however, that the *negotiator* Annius based in Olous must

[6] See Reger (1994: 54, n. 21) for references and discussion.

have cooperated with other *negotiatores* based in Delos to assemble the mixed cargoes and to contract the required ships. This was why Delos prospered so much as an entrepôt. It would be only natural to assume that the Italian *negotiatores* in the east might have tended to take on family members as trading partners, rather than individuals selected more or less at random.

The gentilicial name Annius is attested at Delos, practically from the very beginning of its functioning as an independent port. One Annios son (or freed slave) of Maarkos (Ἄννιος Μαάρκου) is mentioned in an epigraphic document of 158/7 BC (Hatzfeld 1912: 14). It is doubtful whether the branch of the family resident on Delos survived the slaughter of the Italians during the Mithridatic Wars, although one notes the much later M. Ἄννιος Πυθόδωρος, who is attested (in *IDelos*, nos 2535–2537) as being priest for life of Delian Apollo during the reigns of Trajan and Hadrian was an Athenian citizen (Byrne 2003: 55–57). I would like to suggest, albeit very speculatively, that the Olountian Annii and the Delian Annii may have been related.

Another relatively heavy cargo was grain: a tonne of wheat occupies 1.18–1.34m³ of stowage space (McGrail 1989: 356). Thessaly was famous for its production of grain in antiquity, and it is known to have exported grain to Italy. A decree of the Thessalian League (Garnsey *et al.* 1984: 30–44) records the requisition of 430,000 *kophinoi* 'baskets' of wheat (the *kophinos* held 7.5kg of wheat, and so the total amount is about 3,225 tonnes) at the private request of Quintus Caecilius Metellus, a curule aedile of the city of Rome, probably made in 129 BC (Garnsey and Rathbone 1985: 25), when the *strategeia* of the Thessalian League was held by one Petraios (which happened 'zwischen ca 129/8 und ca 126/5', according to Kramolisch 1978: 75–77, C 17). One of the jobs of the curule aedile was to sell cheap grain to the people of Rome. The grain was to be exported out of the ports of Demetrias and Demetreion on the Pagasaean Gulf or Phalara on the Malian Gulf. Quintus Caecilius Metellus was responsible for making the arrangements for shipping 'since the Thessalians have no ships'. We do not know how Quintus Caecilius Metellus arranged for the ships, but one presumes it would be through Italian shippers. We do not know how many Italians were resident in Thessaly in the 2nd century; certainly more Italians were settled in Thessaly during the 1st century than the 2nd (Helly 1983).

The decree of the Thessalian *koinon* involves a gift of wheat to Rome, but it is most probable that grain was also exported from Thessaly to Italy in the Hellenistic period on a commercial basis. It may be of relevance to this article that one individual bearing the name Annius is attested at Hypata in an inscription (*IG* ix.14) where he manumits a slave called Epigone (Ἐπιγόνη ἀπὸ Ἀννίου). The inscription is part of an addition to a list of manumissions dated to the *strategeia* of Mene[krates]. There are two Thessalian *strategoi* of this name dating to the Republican period, to whose tenancy of office this inscription could possibly be dated, numbers G9 of ca 40? BC and H¹8 of 25/4 BC in the schema proposed by Kramolisch (1978: 119, n. 104). Kramolisch, however, had previously proposed a Claudian date for this inscription, and tentatively dated the *strategeia* of the Claudian Menekrates to AD 53/4? (Kramolisch 1975: 345–347). Thus, this Annius may not be relevant to our enquiry as too late. Also, although Hypata was a member of the Thessalian *koinon*, it lay in the Spercheios valley to the south of the main Thessalian grain-producing area. Nevertheless, it is just possible that this Annius is a descendant of an Annius based in Thessaly who was involved in the purchase of grain in Thessaly and its shipment to Delos.

The name Ἀστύ[δο]κος Ἀννίου is included in a list of names of uncertain nature from Thasos, usually dated to the 1st century BC. It is described as being found in the port of Panagia. This presumably means at Scala Panagia on the eastern coast of the island, far away from the main city of Thasos on the north coast of the island. This inscription was originally read as ΑΣΤΥ... ΥΚΟΣ Ἀννίου, which is rendered in the majuscule copy of the inscription in *IG* xii.8.311 (**Figure 3.6**). In that publication, the name has been restored as Ἀστύ[δι]κος? Ἀ[ρ]νίου. The patronymic Ἀρνίου is found in a fragmentary inscription from Thasos of uncertain date and purpose (*IG* xii.8.345), which is presumably the basis for the emendation; these secondary readings of the two names are retained in subsequent publications (Dunant and Pouilloux 1958: 264). It is clear, however, from the letter-forms as published in the majuscule copy, that the patronymic should be read as Ἀννίου. Furthermore, the first name is better read as Ἀστύ[δο]κος, rather than Ἀστύ[δι]κος, as this name is attested at Thasos in other inscriptions of the Hellenistic period, and appears as such in *LGPN*. It therefore seems clear that Astydokos was the son of a mixed marriage between an Italian negotiator named Annius and a Thasian Greek wife. The practice of giving Greek names to the sons of Italians in mixed marriages is known elsewhere in the Hellenistic world (Helly 1983: 371). I believe this points to the Thasian Annius being settled there at a relatively early date, before the Mithridatic massacre of the Italians in 88 BC. It might even date to the 2nd century BC.

Thasos was well known in antiquity as a producer of wine (Salviat 1986), and it is clear from a number of passages in Pliny (*HN* 14.73, 95, 117, 110, 114) that Thasian wine was also known in Italy. It has been suggested that Italian demand for Thasian wine had declined by the 1st century BC, for, when Varro

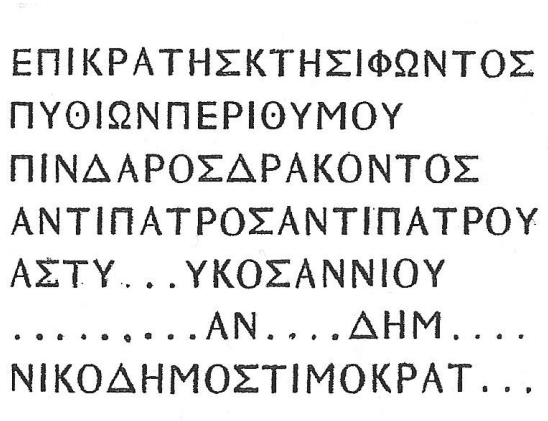


Figure 3.6. Majuscule copy of the list of names from Thasos (after *Journal des Savants* 1872, 235).

mentions wines which are dangerous competition for the wines of Italy, he only mentions the wines of Kos and Chios and not of Thasos (*Res Rustica* 2 pref. 3 '*et navibus vindemiam condimus ex insula Coa et Chia*'; Salviat 1986: 194). It would be natural to assume that Annius was involved in the purchase and export of wine. Wine is a lighter cargo than wheat. A tonne of wine in casks occupies 1.62–1.78m³ of stowage space (McGrail 1989: 356).

The Italian gentilicial name Annius is not a particularly rare one. Most inscriptions listing bearers of the name in the Greek world date to the Imperial period, and the name appears in the full *trianomina* form. These individuals have to be ruled out from the present study on grounds of date. We are rather looking for the name in inscriptions of the 2nd and early 1st centuries.

One further occurrence of the name may be relevant. One Γαίος son of Ἄννιος Γαίου υἱός is found in a list of names, all otherwise Greek, from Pergamon. The inscription is in three columns, the first giving the name of the Pergamene tribe in the genitive, the second the personal name, and the third the patronymic. Consequently, the list is most naturally interpreted as recording a grant of Pergamene citizenship. It was argued by Prott and Kolbe that this list was a fragment of the list of individuals to whom citizenship was granted by the Pergamenes in 133 BC, during the revolt of Aristonicus (Fränkel 1895: no. 566, 8 [= Prott and Kolbe 1902: 122, no. 136, 8]; Hatzfeld 1919: 41; see also Hansen 1971: 152). Even if this is not the occasion for the inscription, it is clear that the inscription is early, and that Gaius Annius is an Italian *negotiator* resident in Pergamon. The Λ. Ἄννιος mentioned in a Hadrianic inscription from Pergamon (*IPerg* 374 A, 26) is irrelevant to the present discussion. He presumably is not a descendant of Gaius Annius, as it is unlikely that the family survived the Mithridatic massacre of 88 BC.

The *gens Annia* seems to be of Campanian origin (see below). In the Republican era, Campania 'was highly prosperous, and well placed for overseas trade' (Wilson 1966: 106), and, during the later Republican period, Puteoli was the chief port in not only of Campania, but of Italy in general. Puteoli entered into a great period of prosperity during the 2nd century BC (Wilson 1966: 89–90, with references). We may therefore assume that the Cretan whetstones and the associated commodities exported from the east would be imported into Italy through Puteoli. The maritime trade between Puteoli and Crete would not have been restricted to whetstones, nor would it have been one-way. Baldwin Bowsky (2016: 31; also this volume) has suggested that ports like Puteoli and Pisa would have played an active role in collecting Italian products for export to the east, as is evidenced by finds of *terra sigillata* stamps in Crete, some of them used to mark vessels produced at Puteoli itself. The evidence mainly comes from Knossos and post-dates the founding of the Roman colony there shortly after 27 BC, but some stamps from Puteoli found there are the product of a Campanian production centre active in the 1st century BC (Baldwin Bowsky 2016: 30), and so therefore probably both earlier than the foundation of the Roman colony, and even than the Roman invasion of the island.

It might be of interest to give some idea of the sailing times involved. Pliny the Elder (*HN* 19.34) mentions that—presumably under ideal sailing conditions—it took nine days to sail from Puteoli to Alexandria, a distance of a thousand nautical miles. If we subtract from this time three or four days, the length of time Strabo (10.4.5) says it took to sail from Cape Samonium in Crete to Egypt, a distance of 350 nautical miles, we get a theoretical best time from Olous to Puteoli (Casson 1951: 139, 141). These timings would be sailing with the wind at a speed of 4 to 6 knots. If sailing against the wind, the speed would have been reduced to 2 or 2½ knots (Casson 1951: 144), and the time taken would be double or even more. This would be sailing directly from Olous to Puteoli, but the sailing would more likely be segmented, despite the higher prices involved, for 'the more a voyage was segmented, the higher was the price' (Arnaud 1951: 335).

Members of the *gens Annii* are also attested as being active in the economic life of Puteoli. The first merchant of Puteoli of the *gens Annia* attested in the literary record was M. Annius. M. Annius was a witness alongside Publius Granius at the trial of Verres in 70 BC. He must have had business interests in Sicily, for he testifies that Verres, when governor of Sicily, had beheaded a Roman citizen in his presence (Cic., *Verr.* 2.5.14). A freedman called P. Annius Seleucus is also known. A warehouse manager, he might have been a former slave of eastern Mediterranean origin, who

has been emancipated for his good work by an earlier representative of the *gens Annia* active in the economic life of Puteoli (Jones 2006: 99–101, 130, 139, 143).

A later prominent member of Puteoli's trading elite was Annius Plocamus. A slave of Annius Plocamus called Lysias cut graffitti in a cave on the road to Berenike in July AD 6, so Plocamus presumably had business interests in Egypt and the Red Sea (Meredith 1953). Pliny (*HN* 6.24.84) mentions that, in the reign of Claudius, Annius Plocamus obtained a contract to gather taxes from the Red Sea, and that some 35 years later, while sailing round Arabia a freedman of his was blown by gales to Hippuri in Ceylon.

The Annii were still prominent in the civic life of Puteoli in the 2nd century AD. In the last quarter of this century, the senate of Puteoli voted permission to the freedmen of L. Annius Modestus, the son of Annius Modestus, the son of Annius Numisianus, a member of the *ordo equester*, to erect a statue in his honour in a place assigned by the *duoviri*. From this and a second inscription, we learn that the Senate of Puteoli met in the *basilica Augusti Anniana*, a building erected by one of the family in the Augustan forum in Puteoli (*CIL* 10.1782, 10.1783 [= Sherk 1970: 35–36, nos 33–34; also D'Arms 1974: 107).

In the later Republican period, the *gens Annia* was widespread in Italy, as we know from inscriptions recording the name (Conway 1879: 559). There is nothing unusual in this, for, by the 2nd century BC, few names were restricted to any one region of Italy (Wilson 1966: 107). The *gens Annia* seems to be of Oscan origin, however, and appears in Oscan inscriptions from Capua in the local Oscan form *Annieí* (Vetter 1953: 76, no. 83b; also Schulze 1902: 423). Members of the *gens Annii* are attested as holding office in the Capuan *magistri* lists for the late-2nd and early 1st centuries BC (Frederiksen 1959: 127, no. 10 [105 BC], 128, no. 15 [before 94 BC]). Like many other of the *gentes* of Puteoli, the *Annii* seem to have originated in Capua (D'Arms 1974: 109). At some point in time various members of the *gens Annia* would have moved from Capua to Puteoli.

The first Annii to move to the Greek east to trade there could have come from either Capua or Puteoli; it is impossible to tell. It is nevertheless possible that they retained commercial links with the members of their families left behind in Campania. Someone would have to take care of the mixed cargoes shipped to Italy. Also, trade was two-way, for the ships sailing from Italy too must have shipped cargoes for sale in the east, and someone in the Greek east must have taken care of selling the cargoes. A passage in Athenaeus (3.116 C) tells us that Euthydemus of Athens mentions Bruttians or Campanians bringing in hearts of tunny (ὀπκύνιο τρίγωνα) from Gades or Tarentum. According to Wellman (1907) this passage is taken from the work περὶ ταρίχων of Euthydemus, who dates to the 2nd century BC. The hearts of tunny mentioned in the text were presumably delicacies, but it would be reasonable to assume that preserved tunny was imported from the west in quantity, to the Greek Aegean in general, and to Athens in particular.

Italians are known at Athens in epigraphic documents dating from the second half of the 2nd century and the beginning of the 1st centuries BC. One Πόπλιος Ἄννιος is recorded on an Athenian grave stele of this period (*CIL* 3.7292). A Γάι[ος Ἄν]ωιος Ῥωμαῖος appears in an Athenian ephebic list dating to circa 50–40 BC (*IG* ii² 1961.54; see Lazzarini 1984: 329, for date).

Conclusion

I believe I have demonstrated that Crete exported whetstones to Italy in the early 1st, and possibly even in the 2nd, centuries BC. Although we have no way of judging how many whetstones were exported in total, the trade must have been sufficiently heavy to have merited Caesar issuing legislation to regulate it in the mid-1st century BC. It would have been later than this date that Italian whetstones began to replace the imported Cretan and Laconian ones.

The Italian name Annius is found uniquely, but repeatedly, at Olous, and may have been brought to the city first by an Italian *negotiator* engaged in this trade. The whetstones would have been shipped to Italy not as a bulk cargo, but as part of mixed cargoes. It is possible that the Annius active in Olous cooperated with other *negotiatores* of the *gens Annii* active in other areas of the Aegean, although this suggestion is admittedly speculative.

Appendix: An Inscribed Rock from Hagios Ioannis, the Spinalonga Peninsula

The personal name Annios is also attested a fourth time at Olous in a much-degraded rock-cut inscription which I came across in 1990. At that time, I was working in Oxford for the British Academy *Lexicon of Greek Personal Names* Project, and I received financial support from The Craven Committee, which I should like to acknowledge. I was accompanied by Doctor Anthony Green, who is no longer with us. I too would like to acknowledge his help and thank him for his companionship.

This inscription is located on the road running northwards into the hamlet named after the church of Hagios Ioannis on the Spinalonga Peninsula, very close to the other two inscriptions recording the name Annios in Orthypetra. The inscription is carved on a

rock in the middle of a field on the left-hand (western) side of the road, about 80–100m. south of the church (**Figure 3.7**). The flat rock is covered with five or more words, which are eroded and difficult to read, together with the image of a single foot, and a pentangle.

Figure 3.7. Position of the inscription in a field to the south of the church at Aghios Ioannis (photo by A. Green).

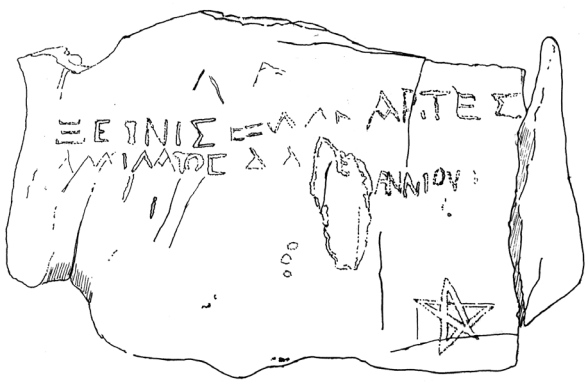


Figure 3.8. Photograph and facsimile drawing of the inscription at Aghios Ioannis (photo and drawing by author).

Below, I have tried to transcribe the inscription to script as far as the fonts available to me permitted:

I have read this inscription as consisting of at least two personal names (with patronymics) or as many as five, on either side of the image of a foot. There is no particular reason why the names must be contemporary with one another. The inscriptions are of different sizes and contain different letter-forms. On the other hand, I would expect the inscriptions to be carved at roughly the same period of time.

Λ Α

ΞΕΙΝΙΣ ΕΞΙΛΝ ΑΡ.ΤΕΣ

ΜΙΛΑΤΟΣ ΔΛ

ΑΝΝΙΟΥ

At the top of the stone there may be two faint letters, either *lambda* or *alpha*. One trouble encountered when dealing with the inscriptions of the Spinalonga Peninsula is that in places the stone naturally weathers into the shape of rectilinear letters, and we cannot be sure that we are not dealing with a phantom reading.

Middle right, we can reasonably clearly make out the personal name ΧΕΙΝΙΣ (Χεῖνις). This name is not to my knowledge otherwise attested in Crete, but it is, for example, in Rhodes, Karpathos, Kos and Nisyros (*LGPN*, Vol. 1: 341–342). The name is written with a three-barred ksi at the beginning and a four-barred *sigma* at the end. The second letter at least is a sign of an early date, perhaps 3rd-century BC. As well as the letter-forms, the large size of the letters argues for this name being inscribed at an earlier date than those to its right and beneath.

To its right come some letters written on a smaller scale, the first three of which I read as ΕΞΑ. The personal name Ἐξάκων is widely attested in a number of other Cretan cities in fourteen examples (*LGPN*, Vol. 1: 152). These three letters could be interpreted in two ways, either as the beginning of a separate personal name, or the patronymic of Xeinis. Bearing in mind the smaller scale of the letters, and the difficulty of fitting the letters required to construct a genitive form into the space available, I would prefer to restore a separate name Ἐξᾰ́[ων] in the nominative. This name was presumably inscribed on the stone at a later date than the name Xeinis.

The word written below Xeinis could, again, be interpreted in two ways, either as a nominative form of the personal name Μίλατος or Μιλάτ<ί>ος, therefore

perhaps as an ethnic of Xeinis: Μιλάτ<ί>ος. The apparent initial *alpha* is probably to be explained as a natural fissure in the rock. Given that the size of the letters, and their forms, are different from those of the Xeinis inscription, it is, again, best to see these letters as being inscribed at a later time, and to interpret them as a separate name in the nominative case, rather than an ethnic.

According to Peter Fraser (2000: 154) 'the use of ethnic personal names provides a substantive link between an ethnic personal name and the name of the city of which it is the ethnic, the range of possible explanations is large. It has been maintained that ethnic names reflect a relationship involving the bestowal of ξενία, or of the status προξενία between the family of the person so named and the community after which he is named. That may well be so, but the nomenclature may equally or also reflect a less official, less public link; for instance, a parent or grandparent of an individual so named'. For any of the interpretations mentioned above to be valid, it is necessary to postulate that the neighbouring city of Milatos was still in existence or continued to play a part in the collective memory.

Although we do not know where the precise borders of Olous ran in antiquity, it is almost certain that the territorial boundary between Milatos and Olous ran along the Kadiston mountain range which formed a peninsula enclosing the gulf of Mirabello to the north. Dreros bordered Olous to the west (**Figure 3.1**).

At some point during the later Hellenistic period, both Milatos and Dreros lost their independence. Neither city is listed in the treaty which Eumenes II made with the 31 cities of the Cretan *Koinon* in 183 BC which had still managed to maintain their independence down to that date (*IC* IV.179, with the corrections of Dunst 1956), so their loss of independence can presumably be placed before 183 BC. An inscription of Miletus (*Milet.* 1.3.140; Austin 1981: 158–159, no. 89), possibly dating to shortly after 259 BC, records three separate treaties concluded with the Cretan states of Knossos, Gortyn and Phaistos to prevent the purchase of Milesian citizens and slaves. A separate list of other Cretan states which had taken a similar decision is appended to each decree. Some 19 states are in alliance with Knossos, including Milatos and Dreros, as well as the neighbouring cities of Lato and Olous, all four overlooking the Bay of Mirabello. These four states, despite any local differences they may have had with each other, presumably relied on the protection of the Knossian alliance to prevent their annexation by Lyttos.

An inscription found at Dreros (*IC* I.ix.1; Austin 1981: 161–162, no. 91) preserves an oath sworn by the ephebes (*agelai*) of Dreros to be friendly towards Dreros and Knossos, and to do whatever harm they could towards the Lyttians. The 'War of Lyttos', described by Polybios (4.53.3–55.6) seems to have broken out in 221 BC or shortly before. The inscription need not be directly connected with the outbreak of the War of Lyttos, as it frequently thought to be. The inscription does, however, underline the threat from Lyttos perceived by the ruling element of the city. We have no further information as to the date and circumstances of Drerian loss of independence.

The destruction of Milatos is mentioned by Strabo (10.4.14), who tells us that the cities of Milatos and Lykastos no longer exist, and their territory was taken by the Lyttians and the Knossians (presumably respectively), but with no firm indication of date. We know that the territory of Lykastos was occupied by the Knossians at some time well before 184 BC, for in this year the Gortynians attempted to transfer the 'Lykastion' from the Knossians to the Rhaukians (Polyb. 22.15.1; Walbank 1979: 201).

It has been argued that an inscription preserving the restored ethnic M]ιλάτι[οι dates to *c.* 206 BC (Kern 1900: 17, no. 21), in which case we could date the destruction of Milatos after that date, but the restoration is uncertain.

I have suggested elsewhere (Sekunda 2010) that both Milatos and Dreros lost their independence due to Lyttian expansion, at some point between 239 and 234/3, while their young men, serving in a symmachic contingent sent to Attalos were settled at Miletus, but this is admittedly, speculative. At any rate, it seems that on historical grounds we have to date this part of the inscription from Spinalonga, whether we interpret it as a separate personal name, or as an ethnic of *Xeinis* to sometime before 183 BC.

As far as the dating evidence supplied by the letter-forms is concerned, the broken-barred *alpha* is a letter-form which is usually not considered to have come into general use much before the 2nd century BC. The final *sigma* of the word Μίλατος or Μιλάτ<ί>ος is spelt with square sides, which is a variant form of the lunate sigma. The lunate *sigma* is widely considered not to have been used in inscriptions before the imperial period. Wilhelm, however, noted occurrences of the lunate *sigma* in inscriptions, including one from Gortyn, as early as the 3rd century BC, and one example of the square-sided *sigma* is found in an inscription (Syll^3 301) from Olympia honouring Q. Marcius Philippus, consul in 169 BC (Reichel and Wilhelm 1901: 74). Lunate letter forms going back to the 4th century BC have been observed on the coins of the Ionian cities by Philip Kinns, and a lunate *sigma* 'on an issue of probably semi-official Rhodian drachmas struck on Crete in the

late-3rd century in the name of Straton (CTPATΩN)' (Ashton *et al.* 2014: 15). So, it seems that this part of the inscription can be dated to the early 2nd century BC.

The letters APTEΣ paced at the top right of the inscription are not otherwise known as a personal name, but the personal names Ἀρτέμα and Ἀρτεμᾶς are both names known from Imperial inscriptions from the nearby city of Hierapytna in eastern Crete (*LGPN* 1: 81), both dialect theophoric forms connected with Artemis. Presumably the name Ἄρτες is a contracted form of APTEMAΣ (or similar). The broken-barred alpha might date the inscription as early as the 2nd century BC.

Below this name the outline of a foot is carved accompanied by an inscribed name which I read as Ἀννίου, the genitive of the personal name Annios. There is no need to consider this to be a patronymic accompanying Ἄρτες, as the letters are written in different sizes, which indicates that the two lines of writing might have been carved at different times, and do not belong to the same individual. The best way of interpreting the genitive of the personal is that it accompanies the carved footprint, showing that it belongs to Annius. The Ἀννίου inscription could have been carved at either a Hellenistic or a Roman date.

The symbol of a pentangle (or pentagram) is carved at the bottom right of the rock surface. In traditional literature this symbol, as other 'running' symbols, like the 'swastika', is interpreted as a symbol having solar significance (Roes 1938: 164). In a general sense this may be the case, and in Greek culture the solar deity is, of course, Apollo. Indeed, on coins of the Bruttian city of Nucera the head of Apollo is shown on the obverse, and a pentagram between the legs of a horse on the reverse (Rutter and Burnett 2001: 184, nos 2437–2446, pl. 39, 2438, 2444; Healey 1986: 331–333). It is worth noting, however, that the pentangle symbol is formed from the conjoined letter *alpha* repeated three times, and, in this case, it appears as a symbol of Apollo, not because of its solar significance, but because the name of Apollo begins with the letter *alpha*.

In other cases, the pentangle appears in contexts where it is not associated with Apollo, but with another deity whose name begins with the letter *alpha*. The pentangle thus appears as a blazon on a shield held by Athena on a Panathenaic vase in Geneva dating to circa 490 BC (*CVA* Switzerland 3: 26, pl. 113, 7). On coins of the Lucanian city of Veleia, the head of Athena is shown on the obverse, and on the reverse is shown a lion with a pentangle above (Healey 1986: pls 274–275; Rutter and Burnett 2001: 120, no. 1306, pl. 24).

Pitane, the modern Çandarlı, was an Aeolian city on a small peninsula to the NE of Phocaea, near the mouth of the Kaïkos (Diod. 17.7.9; Keil 1950; Stillwell 1976: 715). Its bronze coins of the 4th century BC show on the obverse the horned head of Zeus Ammon and on the reverse a pentangle (Wroth 1892: 9–10, pl. xxxiv). Imperial bronze coins from the time of Domitian (?) show the pentangle on a hoplite shield (Wroth 1892: 171–173, pl. xxiv, 6–10). The probable significance of the pentangle in this case is that it serves as a 'label' of Ammon.

The pentangle in the Spinalonga inscription would thus also serve as the sign of a deity whose name began with the letter *alpha*. Given the theophoric nature of the name Ἄρτες at the top of the rock, it would seem that this deity was Artemis, the goddess of hunting.

If our interpretation of this series of inscriptions is correct, they were inscribed by five separate individuals. Four are in the nominative case, and one, that of Annios, in the genitive. As noted above, presumably Annius left his name in the genitive as it accompanies the foot: so 'footprint of Annius'. At Orthipetra one inscription (at least) accompanying the footprints left by Annius is in the genitive. The four others leaving their names in the nominative maybe did so with the meaning 'Xeinis (and the rest) was here (too)'. One might imagine that Annios was the first to inscribe his name on the rock, but this does not need to be necessarily the case. The purpose of the inscription may be that the individuals named ask Artemis to give them good luck in the hunt. The names would have been inscribed separately, over a period of time.

On the opposite side of Elounda Bay, also lying within the territory of the ancient city of Olous, lies the border fortress of Stis Pinès. Carved on a large rock ten metres from the entrance Van Effenterre (1948: 1044, fig. 14) found the carvings of an arrowhead, an archer, and the partially preserved name APTEṂ (**Figure 3.9**). One

Figure 3.9. Rock-cut inscriptions and drawings found at the fort of Stis Pinès (after Van Effenterre 1948: 1044, fig. 14).

imagines that these images and inscription were carved with a similar aim in mind.

Acknowledgements

I would like to thank the late Costis Davaras, who was Ephor in Agios Nikolaos in 1990, for the permission he granted me to publish the inscription dealt with in this appendix.

Bibliography

Primary Sources

Cicero. *M. Tulli Ciceronis Pro L. Flacco oratio.* Edited with introduction and notes by T.B.L. Webster. Oxford: Clarendon Press, 1931.

Digest. *Digesta Iustiniani Augusti*, Vol. 2. Edited by T. Mommsen. Berlin: Weidmannos, 1870.

Diodorus. *Library of History,* Vol. 8: Books 16.66–17. Translated by C.B. Welles. Loeb Classical Library 422. Cambridge: Harvard University Press, 1963.

Livy. *Julius Obsequens. History of Rome*, Vol. 14: *Summaries, Fragments. Julius Obsequens. General Index*. Translated by A.C. Schlesinger; index by R.M. Geer. Loeb Classical Library 404. Cambridge: Harvard University Press 1959.

Martial. *Epigrams*, Vol. 2: Books 6–10. Edited and translated by W.C.A. Ker. Loeb Classical Library 95. Cambridge: Harvard University Press, 1919.

Pliny. *Natural Histories*, Vol. 1: Books 1–2. Translated by H. Rackham. Loeb Classical Library 330. Cambridge: Harvard University Press, 1958.

Pliny. *Pliny Natural Histories*, Vol. 5: Books 17–19. Translated by H. Rackham. Loeb Classical Library 371. Cambridge: Harvard University Press, 1961.

Pliny. *Natural Histories*, Vol. 10: Books 36–37. Translated by D.E. Eichholz. Loeb Classical Library 419. Cambridge: Harvard University Press, 1969.

Polybius. *Histories*, Vol. 5: Books 16–27. Translated by W.R. Paton. Loeb Classical Library 160. Cambridge: Harvard University Press, 1926.

Varro and Cato. *On Agriculture*. Translated by W.D. Hooper and H.B. Ash. Loeb Classical Library 283. Cambridge: Harvard University Press, 1934.

Secondary Sources

Arnaud P. 2007. Diocletian's prices edict: the prices of seaborne transport and the average duration of maritime travel. *Journal of Roman Archaeology* 20: 321–336.

Austin, M.M. 1981. *The Hellenistic World from Alexander to the Roman Conquest. A Selection of Ancient Sources in Translation.* Cambridge: Cambridge University Press.

Ashton, R., P. Kinns and A. Meadows. 2014. Opuscula Anatolica IV. *Numismatic Chronicle* 174: 1–28.

Baldwin Bowsky, M.W. 2001. When the flag follows trade: Metellus, Pompey and Crete, in E. Dąbrowa (ed.) *Roman Military Studies* (*Electrum* 5): 31–37. Kraków: Jagiellonian University Press.

Baldwin Bowsky, M.W. 2016. A context for Knossos: Italian Sigillata stamps and cultural identity across Crete, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 27–41. Oxford: Oxbow Books.

Beresford, J. 2013. *The Ancient Sailing Season* (*Mnemosyne,* Suppl. 351). Leiden and Boston: Brill.

Blackman, D.J. 1976. Olous, in R. Stillwell, W.L. MacDonald and M.H. McAllister (eds) *The Princeton Encyclopedia of Classical Sites*: 645–646. Princeton: Princeton University Press.

Broughton T.R.S. 1952. *The Magistrates of the Roman Republic*, Vol. 2 (Philological Monographs 15.2). New York: American Philological Association.

Byrne, S.G. 2003. *Roman Citizens of Athens* (Studia Hellenistica 40). Leuven: Edition Peeters.

Casson, L. 1951. Speed under sail of ancient ships. *Transactions of the American Philological Association* 82: 136–148.

Chaniotis, A. 1999. Milking the mountains: economic activities on the Cretan uplands in the Classical and Hellenistic period, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 181–220. Stuttgart: Franz Steiner Verlag.

CIL = Corpus Inscriptionum Latinarum.

Conway, R.S. 1879: *The Italic Dialects,* Vol. 2. Cambridge: Cambridge University Press.

CVA = Corpus Vasorum Antiquorum.

D'Arms, J.H. 1974. Puteoli in the second century of the Roman Empire: a social and economic study. *Journal of Roman Studies* 64: 104–124.

Davaras, K. 1963. Ἐπιγραφαὶ ἐκ Κρήτης 2. *Αρχαιολογικόν Δελτίον* 18, Vol. A, *Μελέτες*: 141–160, pls 66–71.

de Souza, P. 1998 Late Hellenistic Crete and the Roman conquest, in W.G. Cavanagh and M. Curtis (eds) *Post Minoan Crete: Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College London, 10–11 November 1995* (British School at Athens Studies 2): 112–116. London: British School at Athens.

Dunanat, C.J. and Pouilloux. 1958. *Recherches sur l'histoire et les cultes de Thasos,* Vol. 2. *De 196 avant J.-C. jusqu' à la fin de l'antiquité* (Études Thasiennes 5). Paris: École française d'Athènes.

Dunbabin, K.M.D. 1990, *Ipsa deae vestigia...* Footprints divine and human on Graeco-Roman monuments. *Journal of Roman Archaeology* 3: 85–109.

Dunst, G. 1956. Die Bestimmungen des Vertrages zwischen Eumenes II. und dem kretischen Städten vom Jahre 183 v. Chr. *Philologus* 100: 305–311.

Francis, J. 2017. Roman influence on Greek Sphakia, in D.W. Rupp and J.E. Tomlinson (eds) *From Maple to*

Olive: A Colloquium to Celebrate the 40th Anniversary of the Canadian Institute in Greece (Publications of the Canadian Institute in Greece 10): 505–533. Athens: Canadian Institute in Greece.

Fraser, P. 2000. Ethnics as personal names, in S. Hornblower and E. Matthews (eds) *Greek Personal Names. Their Value as Evidence*: 149–158. Oxford: The British Academy and Oxford University Press.

Frederiksen, M.W. 1959. Republican Capua: a social and economic study. *Papers of the British School at Rome* 27, n.s. 14: 80–130.

Galán Vioque, G. 2002. *Martial*, Book VII. *A Commentary* (*Mnemosyne*, Suppl. 226). Translated by J.J. Zoltowski. Leiden, Boston and Köln: Brill.

Garnsey, P., T. Gallant and D. Rathbone. 1984. Thessaly and the grain supply of Rome during the second century B.C. *Journal of Roman Studies* 74: 30–44.

Garnsey, P. and D. Rathbone. 1985. The background to the Grain Law of Gaius Gracchus. *Journal of Roman Studies* 75: 20–25.

Guarducci, M. 1942–1943. Le impronte del *Quo Vadis* e monumenti affini, figurati ed epigrafici' *Atti della Pontificia Accademia Romana di Archeologia. Rendiconti* 19: 305–344, 310–311.

Hansen, E.V. 1971. *The Attalids of Pergamon*, 2nd. ed. Ithaca: Cornell University Press.

Hatzfeld, J. 1912. Les Italiens résidant à Délos mentionnés dans les inscriptions de l'île. *Bulletin de Correspondance Hellénique* 36: 5–218.

Hatzfeld, J. 1919. *Les trafiquants italiens dans l'orient hellénique*. Paris: De Boccard.

Healey, J.F. (ed.) 1986. *Manchester University Museum: The Raby and Güterbock Collection* (*Sylloge nummorum Graecorum* 7). London: The British Academy by Oxford University Press.

Helly, B. 1983. Les Italiens en Thessalie au IIe et au Ier s. av. J.-C., in M. Cébeillac-Gervasoni (ed.) *Les 'bourgeoisies' municipales italiennes aux IIe et Ier siècles av.J.-C.: [Colloque] 7–10 décembre 1981, Centre Jean Bérard, Institut Français de Naples* (Colloques internationaux du Centre national de la recherche scientifique 609): 355–380. Paris: Éditions du Centre national de la recherche scientifique; Naples: Bibliothèque de l'Institut français de Naples.

Hobson, D. 1989. Naming practices in Roman Egypt. *Bulletin of the American Society of Papyrologists* 26: 157–174.

Holm, C.E. 1936. *Greichische-Ägyptische Namenstudien*. Upsalla: Wettergren und Kerbers Förlag.

Jones, D. 2006. *The Bankers of Puteoli. Finance, Trade and Industry in the Roman World*. Stroud: Tempus.

IC = Guarducci, M. 1935–1950. *Inscriptiones Creticae*, vols I–IV. Rome: Libreria dello Stato.

IDelos = A. Plassart, J. Couprey, F. Durrbach, P. Roussel and M. Launey (eds) 1926–1972. *Inscriptions de Délos.* Paris: De Boccard.

IG = Inscriptiones Graecae.

IPerg. = Fränkel, M. 1865. *Die Inschriften von Pergamon,* Vol. 2. Berlin: W. Spermann.

Keil, J. 1950. Pitane, in *Paulys Realencyclopädie der classischen Altertumswissenschaft* 20.2*:* 1841–1843.

Kern, O. 1900. *Die Inscriften von von Magnesia am Maeander*. Berlin: W. Spemann.

Klebs, J. 1894. Alfenus (8), in *Paulys Realencyclopädie der classischen Altertumswissenschaft* 1: 1472–1474.

Kramolisch, H. 1975. Zur Ära des Kaisers Claudius in Thessalien. *Chiron* 5: 337–347.

Kramolisch, H. 1978 *Die Strateges des Thessalischen Bundes vom Jahre 196 v. Chr. Bis zum Ausgang der Römischen Republik* (Demetrias 2). Bonn: Habelt.

Kunkel, W. 1973. *An Introduction to Roman Legal and Constitutional History*, 2nd ed. Translated by J.M. Kelly. Oxford: Clarendon Press.

Lazzarini, M.L. 1984. Note Onomastiche e Prosopografiche. *Rivista di Filologia e di Istruzione Classica* 112: 327–337.

LGPN = Fraser, P.M. and E. Matthews (eds) 1987–. *Lexicon of Greek Personal Names*. Oxford: Clarendon Press.

McGrail, S. 1989. The shipment of traded goods and of ballast in antiquity. *Oxford Journal of Archaeology* 8.3: 353–358.

Maas, P. 1927. Simmias (6), in *Paulys Realencyclopädie der classischen Altertumswissenschaft* 3a: 155–158.

Masson, O. 1996. Nouvelles notes d'anthroponymie grecque 14. De Κοπρεύς à Κοπρία et Saint Coprès: noms copronymes. *Zeitschrift für Papyrologie und Epigraphik* 112: 147–150.

Masson, O. 2000. *Onomastica Graeca Selecta*, Vol. 3. Indices by C. Dobias and L. Dubois. Geneva: Droz.

Maxwell-Stuart, P.G. 1980. Two unidentified gemstones. *Rheinisches Museum für Philologie* 123: 362–363.

Meredith, D. 1953. Annius Plocamus: two inscriptions from the Berenike road. *Journal of Roman Studies* 43: 38–40.

Milet 1.3 = Kawerau, G. and A. Rehm (eds) 1914. *Das Delphinion in Milet*. *Milet* 3. *Ergebnisse der Ausgrabungen und Untersuchungen seit dem Jahr 1899*. Berlin: Reimer.

Pape, W. and G.E. Benseler. 1884. *Wörterbuch der griechischen Eigennamen, Erste hälfte. A-K*, 3rd. ed. Brunswick: F. Vieweg.

Parker, A.J. 1984: Shipwrecks and ancient trade in the Mediterranean. *Archaeological Review from Cambridge* 3.2: 99–133.

Parker, A.J. 1990. Classical antiquity: the maritime dimension. *Antiquity* 64: 335–346.

Pomeroy, S.B. 1986. Copronyms and the exposure of infants in Egypt, in R.S. Bagnall and W.V. Harris (eds) *Studies in Roman Law in Memory of A. Arthur Schiller*: 147–162: Leiden: Brill.

Prott, H.v. and W. Kolbe. 1902. Die 1900–1901 in Pergamon gefunden Inschriften. *Mitteilungen des Deutsches Archäologischen Instituts, Athenischen Abteilung* 27: 44–151.

Rankov, B. 1999. The Roman ban on the export of weapons to the Barbaricum: a misunderstanding. *Journal of Roman Military Equipment Studies* 10: 115–120.

Raulin, V. 1869. *Description physique de l'Isle de Crète*. Paris: A. Bertrand.

Reichel, W. and W. Wilhelm. 1901. Das Heligthum der Artemis zu Lusoi. *Jahreshefte des Österreichischen Archäologischen Institutes in Wien* 4: 1–88.

Reger, G. 1994. *Regionalism and Change in the Economy of Independent Delos, 314–167 B.C.* Berkeley: University of California Press.

Roes, A. 1938. L'Animal au Signe solaire. *Revue Archéologique* 1938.2: 153–182.

Rougé, J. 1952. La navigation hivernale sous l'Empire romain. *Revue des Études Anciennes* 54: 316–325.

Russell, B. 2013. Roman and late antique shipwrecks with stone cargoes: a new inventory. *Journal of Roman Archaeology* 26: 331–362.

Rutter N.K. and A.M. Burnett (eds) 2001. *Historia Numorum: Italy*. London: British Museum Press.

Salviat, F. 1986. Le vin de Thasos, amphores, vin et sources écrites, in J.-Y. Empereur and Y. Garlan (eds) *Recherches sur les amphores grecques: actes du Colloque International organisé par le Centre National de la Recherche Scientifique, l'Université de Rennes II et l'École Française d'Athènes* (Athènes, 10–12 Septembre 1984) (*Bulletin de Correspondace Héllenique,* Suppl. 13): 145–196. Athens: Ecole Française d'Athènes; Paris: De Boccard.

Schulze, W. 1902. *Zur Geschichte lateinischer Eigennamen* (*Abhandlungen der königlichen Gesellschaft der Wissenschaften zu Göttingen, Philologisch-Historische Klasse*, 5.5). Berlin: Weidmannsche Buchhandlung.

SEG = 1923–. *Supplementum Epigraphicum Graecum*. Leiden: Sijthoff and Amsterdam: Gieben.

Sekunda, N.V. 2010. Appendix. The historical background to the Milesian grants of citizenship to Cretans in 234/3 and 229/8 BC, in R.W.V. Catling, F. Marchand and M Sasanow (eds) *Onomatologos. Studies in Greek Personal Names Presented to Elaine Matthews*: 59–64. Oxford: Oxbow Books.

Simonsen, K. 2003. Winter sailing. *Mouseion* Ser. 3.3: 259–268.

Sherk, R.K. 1970. *Municipal Decrees of the Roman West* (Arethusa Monograph 2). Buffalo: Arethusa.

Solin, H. and O. Salomies. 1988. *Repertorium nominum gentilium et cognominum Latinorum*. Hildesheim; New York: Olms.

Spanakis, S.G. 1993. *Πόλεις και Χωριά της Κρήτης στο Πέρασμα των Αιώνων*, Vol. 2. Heraklion: Detorakis.

Stevenson, G.H. 1939. *Roman Provincial Administration till the Age of the Antonines*. Oxford: Blackwell.

Stillwell, R., W.L. MacDonald and M.H. McAllister (eds) 1976. *The Princeton Encyclopedia of Classical Sites.* Princeton: Princeton University Press.

Stronk, J.P. 2014–2015. Review of Beresford 2013. *Talanta* 46–47: 335–338.

Syll³. = Dittenberger, W. (ed.) 1915–1924. *Sylloge Inscriptionum Graecorum*. Leipzig: S. Hirzelium.

Tataki, A.B. 1996. The Nomina of Macedonia, in A.D. Rizakis (ed.) *Roman Onomastics in the Greek East: Social and Political Aspects* (*Meletemata* 21): 105–109. Athens and Paris: De Boccard.

Van Effenterre, H. 1949. Fortins crétoises, in *Mélanges d'archéologie et d'histoire offerts à Charles Picard à l'occasion de son 65e anniversaire*, Vol. II (*Revue Archéologique* 6.29): 1033–1046. Paris: Presses universitaires de France.

Vetter, E. 1953. *Handbuch der italischen Dialekte*, Vol. 1. Heidelberg: C. Winter.

Walbank, F.W. 1979. *A Historical Commentary on Polybius,* Vol. 3. *Commentary on Books* 19–40. Oxford: Oxford University Press.

Watson, A. (ed.) 1985. *The Digest of Justinian,* Vol. III. Philadelphia: University of Pennsylvania Press.

Wellman, M. 1907. Euthydemos (15), in *Paulys Realencyclopädie der classischen Altertumswissenschaft* 6: 1505.

Whitehead, D. (trans.). 2019. *Xenophon: Poroi = Revenue-sources*. Oxford: Oxford University Press.

Wilson, A.J.N. 1966. *Emigration from Italy in the Republican Age of Rome*. Manchester and New York: Manchester University Press.

Wroth, W.W. 1892. *British Museum Catalogue of the Greek Coins of Mysia*. Catalogue of the Greek Coins in the British Museum. London: Trustees of the British Museum.

4.

La dernière ligne droite dans la rivalité acharnée et séculaire entre Phaistos et Gortyne[1]

Adam Pałuchowski

Introduction

Dans la présente étude on s'intéressera à l'évolution du statut de Phaistos dans la seconde moitié de l'époque hellénistique, avec l'habituel expansionnisme gortynien en toile de fond. On s'efforcera de mettre à contribution tout un éventail de sources, de telle sorte que leur recoupement permette de restituer au mieux les mutations successives : on fera appel en première instance au matériel épigraphique et numismatique mais également, dans une moindre mesure, narratif et archéologique.

Le point de départ se situera donc au milieu environ du III^e^ siècle quand la souveraineté politique et/ou institutionnelle de Phaistos était, de toute évidence, sinon assez solide, du moins assurée. Toutefois, afin de peindre à grandes touches un contexte historique plus large, il sera capital de faire brièvement part des développements antérieurs dans les relations de plus en plus tendues ou franchement conflictuelles entre les deux puissances régionales se disputant la mainmise sur le débouché maritime de la plaine de la Messara, cruciale, en particulier, à l'époque de l'intensification des échanges commerciaux. À l'étape subséquente on portera attention au statut dégradé de *polis* ou communauté dépendante, suivi par celui de sympolitie renouvelée, pour en arriver à la phase finale de l'abandon forcé du site et de l'absorption de la *chora* phaistienne dans le territoire gortynien au milieu du II^e^ siècle. La question centrale, dans cette optique, est l'inapplicabilité du modèle linéaire de l'évolution statutaire, qu'il faudrait impérativement remplacer par un modèle des fluctuations statutaires, rythmées par des cycles d'extension–contraction en alternance.

Les préliminaires : Phaistos souveraine

Vers le milieu du III^e^ siècle, si la souveraineté phaistienne n'est pas complète, elle n'en est pas moins inexistante, comme une convention passée entre Phaistos et Milet semble l'indiquer d'une manière univoque.

1. *IC* I.xxiii.1* (Schmitt 1969 : n° 482 III).

Stèle de marbre blanc, dont la partie supérieure est décorée d'anaglyphe représentant la tête d'Apollon, découverte à Milet, au sanctuaire d'Apollon Delphien ou le *Delphinion* (*Milet* I.3.140). Elle porte trois accords de coopération ou assistance juridique[2] relative à l'interdiction de l'achat d'hommes libres et d'esclaves, conclus entre Cnossos (*Milet* I.3.140,$_{1–39}$ = *IC* I.viii.6*), Gortyne (*Milet* I.3.140,$_{39–51}$ = *IC* IV.161*), enfin Phaistos (*Milet* I.3.140,$_{51–67}$ = *IC* I.xxiii.1*) d'une part et Milet de l'autre, qui engagent également les alliées respectives de chacune des trois cités crétoises contractantes, énumérées une par une à la fin de chaque accord.

Φαιστίων. | τάδε συνέθεντο Φάϊστιοι καὶ Μιλήσιοι κοσμιόν(των τῶν) σὺν Μητιόχῳ[ι] | ἐμ Φαιστῶι, ἐμ Μιλήτωι δὲ στεφανηφόρου Δημητρίου· σῶμ[α] | ἐλεύθερον μὴ ὠνείσθω ὁ Μιλήσιος Φάϊστιον μηδ' ὁ Φάϊστιος Μιλ[ή]|σιον, ἂμ μὴ κελομένου πρίαται· ἂν δὲ κε<λ>ομένου πρίαται, τᾶς ἰσων[ί]|ας ἀπολυσάτω· ἂν δὲ μὴ κελομένου πρίαται, ἀπαγέσθω ὅ τε Φαίσ|τιος ἐγ Μιλήτου καὶ ὁ Μιλήσιος ἐκ Φαιστοῦ· ἂν δέ τις δοῦλον πρία|ται ὠνᾶι καὶ πράσει καὶ μὴ ἀνδραποδίξηται, ἀποδοὺς τὰν τιμὰν | ὁ ἐφαψάμενος, ὅσου ἐπρίατο, τῶι ἔχοντι, τὸ σῶμα ἀγαγέσθω. ἂν | δέ τι ἀντιλέγωσιν περὶ ὁτινοσοῦν, κρίνειν ἐμ Μιλήτωι μὲν τοὺς | τοῦ ἐμπορίου ἐπιμελητὰς πένθ' ἀμερᾶν, ἐμ Φαιστῶι δὲ τὸ δικασ|τήριον τὸ πολιτικὸν πένθ' ἀμερᾶν. τὰς δὲ πράξεις εἶναι ἐμ Μιλή|τωι μὲν κατὰ τὸν νόμον τῶν τοῦ ἐμπορίου ἐπιμελετῶν, ἐμ Φαισ|τῶι δὲ τοὺς κόσμους πράξαντας ἀποδοῦναι τρόπωι ὧι ἂμ βού|λωνται ἐν ἀμέραις δέκα ἀφ' ἃς κα καταδικασθῆι. ἀναγράψαι δὲ τὰς | συνθήκας ἐμ Φαιστῶι μὲν εἰς τὸ πρυτανεῖον, ἐμ Μιλήτωι (δὲ) εἰς τὸ ἱερὸν τοῦ | Ἀπόλλωνος. κατὰ ταὐτὰ Ματάλιοι, Πολυρήνιοι.

Traduction : (*Scil.* La section des) Phaistiens. Les Phaistiens et les Milésiens se sont mis d'accord, sous le mandat du collège de cosmes présidé par Métiochos à Phaistos, sous le stéphanéphore Démétrios à Milet,

[1] Il est à noter que toutes les dates s'entendent ici avant notre ère.

[2] Chaniotis 1996 C : IV n° 79a : « Rechtshilfevertrag » en allemand, donc littéralement « accord d'assistance juridique ».

au sujet de ce qui suit : Que le Milésien n'achète pas un individu libre, citoyen de Phaistos, ni le Phaistien n'achète le Milésien, à moins qu'il n'achète à l'appel de l'intéressé ; et s'il achète à l'appel de l'intéressé, qu'il lui rende la liberté moyennant le remboursement du montant payé ; s'il achète pourtant sans appel de l'intéressé, que le Phaistien soit reconduit chez lui de Milet, ainsi que le Milésien de Phaistos ; d'un autre côté, si quelqu'un achète un esclave (*doulos*) dans une transaction d'achat-vente et sans qu'il le prenne en esclavage*, que celui qui revendique sa restitution**, après avoir remboursé le propriétaire du montant payé, reprenne*** l'esclave (*soma*). En cas de litige au sujet de quoi que ce soit, que l'affaire soit jugée à Milet par les épimélètes de l'emporion dans un délai de cinq jours, à Phaistos par le tribunal civil dans un délai de cinq jours. Que les paiements des sommes dues à titre de réparation**** se fassent à Milet conformément à la loi des épimélètes de l'emporion, tandis qu'à Phaistos les cosmes, après avoir fait payer (*scil.* les sommes dues à titre de réparation), ont à effectuer la restitution (*scil.* des biens en litige), comme ils l'entendent, dans un délai de dix jours, à compter du jour où le verdict serait prononcé. Que les accords soient rendus publics par écrit à Phaistos au prytanée et à Milet au sanctuaire d'Apollon. Que les Mataliens, Polyrrhéniens (agissent) selon les mêmes règles.

* Partant, il s'agit d'une transaction d'achat-vente régulière, légale et non d'une prise illégale d'un esclave appartenant à un tiers (voir le commentaire d'*IC* IV.161*,$_{42}$ à la page 222a, *in fine*).

** Le commentaire de l'éditrice à la ligne 59 : « ὁ ἐφαψάμενος ille est qui servum sibi vindicat » ; *LSJ*^{9} *s.v.* ἐφάπτω II.c (Med.) : « as law term, c(um) gen(etivo), claim as one's property » et renvoi à *Milet* I.3.140,$_{29}$ (*IC* I.viii.6*,$_{29}$).

*** *LSJ*^{9} *s.v.* ἄγω B (Med. ἄγομαι) : « carry away for oneself ; [...] ; take to oneself ».

**** *LSJ*^{9} *s.v.* πρᾶξις VI : « exaction of money, recovery of debts, arrears, etc. [...] », avec ce qui est dit au sujet du verbe πράζω = πράττω = πράσσω chez Bile 1988 : 327 § 51.222 — il signifie, à l'actif, « faire payer », son composé ἐσπράζω a la valeur de « percevoir un impôt, une amende ».

La datation du document s'étend des années 50 aux années 30 du III^{e} siècle[3], néanmoins, pour les raisons qui découleront de ce qui suivra, on préfère se tenir à la chronologie haute, autrement dit au milieu du III^{e} siècle. Quant à la situation de Phaistos par rapport à Gortyne, l'opinion de P. Brulé — quoique passablement vague — donne l'impression de privilégier une forme de dépendance plus ou moins marquée[4]. Compte tenu de l'expansionnisme gortynien bien rôdé dans la plaine de la Messara, il est tout sauf inattendu de voir Phaistos graviter dans l'orbite de Gortyne à cette époque-là. Toujours est-il que tant les institutions civiques phaistiennes que les procédures les impliquant invoquées dans l'accord sont à mille lieues de donner à penser que nous serions en fait en présence d'une entité politico-institutionnelle dont le relâchement irait jusqu'à une sorte de soumission totale à l'égard de Gortyne. Pareilles sont les conclusions que l'on tire du rapprochement des sections du document, qui contiennent les accords arrangés par Milet avec Knossos et Gortyne : dans l'une et dans l'autre l'appareil institutionnel et procédural ne diverge en rien de ce qui s'établit dans le cas de Phaistos, enfin, l'emplacement de Phaistos à côté des puissances de premier rang telles que justement Knossos et Gortyne en dit déjà long sur la position occupée par Phaistos — si Phaistos était à peine un satellite de Gortyne, pourquoi n'est-elle pas comprise dans la séquence terminale de la convention Milet-Gortyne où sont placés ceux qui suivent l'exemple de l'hégémon gortynien, à entendre les Lyttiens, Arkadiens, Ariaioi et Hyrtaioi (*IC* IV.161*,$_{50/51}$) ? L'examen de l'intitulé des trois sections civiques (knossienne, gortynienne et phaistienne), à l'ouverture de l'accord[5], va dans le même sens car les trois entités politiques en question y sont nettement mises sur un pied d'égalité, l'appellation *polis* correspondant à chacune d'elles sans aucune distinction. D'ailleurs, on a ici le plus ancien emploi de cette appellation en relation avec Phaistos (Perlman 2004 : 1180a n° 980). L'état de cité souveraine s'impose par conséquent tout naturellement. Cette souveraineté phaistienne devait être, sans conteste, tronquée mais, d'abord, ce ne fut pas la première fois que la plus importante *polis* localisée au débouché maritime de la plaine de la Messara en fit l'expérience au profit de Gortyne, puis, Phaistos ne faisait pas non plus figure d'exception, ni à l'échelle crétoise ni à l'échelle égéenne où la marge de manœuvre des cités autonomes enrôlées bon gré mal gré par l'Athènes hégémonique dans la première Ligue de Délos ne paraît pas avoir été sensiblement plus large (Raaflaub 2004 : 144–160 ;

[3] Postérieur à 260/259 d'après la chronologie fixée par A. Rehm dans *Milet* I.3.140 — voir le commentaire de M. Guarducci portant sur *IC* I.viii.6* (page 61a), ensuite *IC* IV.161* (page 221a/b) où la savante se prononce en faveur du milieu du III^{e} siècle ; 252–250 — van Effenterre 1948 : 250–251 ; entre 260 et 230 — Gauthier 1972 : 244 n. 101 ; vers le milieu du III^{e} siècle — Brulé 1978 : 6 ; entre 253 et 250 — Chaniotis 1996 : 35 et 449 (le commentaire chronologique de Chaniotis 1996 C : IV n° 79a).

[4] Brulé 1978 : 11 : « Nous pensons que Phaistos, Matala et Polyrhénia n'ont jamais formé une ligue particulière, en d'autres termes, que la plaine de la Messara n'a pu être divisée en deux camps et, qu'ainsi, Phaistos n'a pu être indépendante — ou antagoniste — de sa puissante rivale Gortyne au cours du III^{e} siècle. Nous croyons, au contraire, qu'au moins Phaistos et Matala étaient dans l'orbite de Gortyne ».

[5] *Milet* I.3.140,$_{1}$ = *IC* I.viii.6*,$_{1}$: τὰ συντεθέντα πρὸς τὰς πόλεις τὰς ἐγ Κρήτηι (suit la section knossienne en première, à la même ligne : Κνωσίων).

Tamiolaki 2010 : 102). Et c'est à peu près dans la même période que se situe aisément une alliance d'assistance militaire lancée entre Phaistos et Éleutherna[6], dont l'existence même ainsi que le contenu dévoilent un statut, en gros, similaire de Phaistos.

Les sources numismatiques et archéologiques dont on dispose à ce jour sont de nature à nous faire supposer une sympolitie plus ou moins profonde entre Phaistos et Gortyne — avec la prédominance de la seconde — entre les milieux du V^e^ et du IV^e^ siècle, suivie du statut d'indépendance pure et simple ou de celui d'autonomie, regagné par Phaistos à la suite d'une rupture de la sympolitie, à partir du milieu du IV^e^ siècle[7]. Tout invite donc à songer que, en parallèle, l'indépendance ou l'autonomie aurait duré approximativement un siècle entier, pour le moins jusqu'à la fin de la première moitié du III^e^ siècle quand Milet (n° 1 ci-avant) et Éleutherna s'arrangent avec Phaistos, comme on vient de le constater. Du coup, le fait que c'est à l'époque tardo-classique ou proto-hellénistique que la cité se fût dotée non seulement de fortifications enfermant une superficie totale d'env. 58 hectares — agrandie sur tout le plateau (ou tout au moins sur son côté ouest) et sur les collines — mais aussi d'un vrai plan d'ensemble structuré aussi bien par trois axes routiers est-ouest et nord-sud que par l'aménagement d'un espace public (Bredaki et Longo 2018 : 37–39 ; Longo 2015a : 168–169 ; 2015b : 476–479) doit être envisagé, outre son objectif défensif et urbanistique qui va sans dire, comme une matérialisation de l'auto-affirmation. Voyons ce qui en advint après.

Phaistos, communauté dépendante de Gortyne

Le témoignage le plus instructif est livré, comme d'ordinaire, par une inscription, datable entre env. 240 et 222, où sont déterminés les termes d'un traité d'alliance entre Aksos et Gortyne.

2. Manganaro 1966 : 18–22, texte B,$_{1–7}$ (*SEG* XXIII.563) = Chaniotis 1996 C : I.1 n° 13,$_{1–7}$.

Stèle calcaire opisthographe, abîmée en haut et en bas, pourtant intégrale des deux côtés, récupérée à Aksos et incorporée à la collection épigraphique du Musée de Réthymnon. Elle porte deux inscriptions : un règlement de culte (A) sur la face antérieure légèrement convexe (c'est un document gravé en premier, voir Manganaro 1966 : 11–18, texte A) et un traité d'alliance (B) sur la face postérieure plate. Les dimensions de la stèle sont les suivantes : hauteur max. 62 cm, largeur 56 cm, profondeur 6–9 cm. Écriture peu soignée, haute de 1,3 cm, largement effacée au centre et à l'angle gauche inférieur. Copié par G. Manganaro (au mois de septembre 1962, aux réserves du Musée de Réthymnon). Réexaminé par A. Chaniotis (voir l'apparat critique ci-après).

Συνθ[ήκ]α [Ἀξί]οις [καὶ τοῖς Γ]ο[ρτυ]νίοις τᾶι | ἄνω πόλι καὶ τᾶι κάτω· συ[μ]μαχήσουσι | Ἄξιοι Γορτυνίοις τᾶι ἄνω πόλι καὶ τᾶ[ι | κ]άτω καὶ βοα[θή]-σουσι· αἰ [δὲ] ἀπαντᾶι, οἱ Γορ|[τ]ύνιοι καθάπ[ερ] παρακ[αλ]οῦσιν, κἄνδρας | ἀποστελίου[σι κα]-θ[άπερ] ἐπιβάλλει αὐτοῖς· | κατὰ ταὐτ[ὰ Ἀξίοις οἱ] Γο[ρ]τύνιοι κτλ.

Apparat critique : Les sections du texte toujours lisibles lors du réexamen de la stèle par A. Chaniotis en 1990, puis en 1992, dans le cadre des recherches menées en rapport avec la publication de Chaniotis 1996, sont soulignées (comme dans Chaniotis 1996). 4 : αἰ [τις?] ἀπαντᾶι G. Klaffenbach (*SEG* XXIV.1251). 4/5 : βοα[θή]σουσι αἴ [τί κα δέω?]νται οἱ Γορ|[τ]ύνιοι καθάπ[ερ] παρακ[αλ]οῦσιν κἄνδρας A. Chaniotis ; le complément [τί κα δέω?] dans la séquence αἴ [τί κα δέω?]νται à la ligne 4 d'après une diplographie probable des lignes 7/8 – αἴ τί κα δέ|ωνται οἱ Γο[ρτύ]νιο[ι] – qui est susceptible d'être également une erreur de gravure du lapicide, donc αἴ τί κα δέ|ωνται οἱ <Ἄξ>ιοι.

Traduction (Bile 1988 : 44–45 n° 39) : Convention entre les Aksiens* et les Gortyniens de la ville d'en haut et de la ville d'en bas : les Aksiens combattrons aux côtés des Gortyniens de la ville du haut et de la ville du bas et leur porteront secours ; si on les attaque, les Gortyniens feront comme ils leur demandent et enverront des hommes comme il leur convient ; que les Gortyniens agissent de la même façon pour les Aksiens, etc.

* La graphie est « Axiens » chez M. Bile.

H.H. Schmitt (1969 : n° 510) croit que la formule « la ville d'en haut et la ville d'en bas » (ll. 1–4, deux fois : τᾶι ἄνω πόλι καὶ τᾶι κάτω) renvoie sans ambiguïté à l'union de Gortyne et de Phaistos, connue par le témoignage n° 3a (voir ci-dessous), inscription que l'on veut contemporaine puisqu'on l'insère également dans la fourchette env. 240–222 (on y reviendra). Un autre traité conclu entre Aksos et Gortyne serait probablement attesté dans *IC* IV.170 (Schmitt 1969 : n° 571), texte extrêmement parcellaire.

A. Chaniotis place visiblement Gortyne et Phaistos sur un pied d'égalité approximatif s'il intitule le n° 2

[6] Chaniotis 1996 C : I.1 n° 10 (*SEG* XLI.741) insérable, selon toute probabilité, entre env. 250 et 230.

[7] Le Rider 1966 : 148–149, 153–158 et, plus singulièrement, 160–163 ; Sheedy 2012 : 119–120. En ce qui regarde l'apport propre de l'archéologie pour restituer les relations très tendues entre Phaistos et Gortyne ainsi que la domination gortynienne allant se consolider de proche en proche aux époques archaïque et classique, voir Lefèvre-Novaro 2014 : 71–73. De même, voir Di Vita 2010 : 41a/b ; Perlman 2004 : 1180a/1181b n° 980 ; Watrous et Hadzi-Vallianou 2004 : 324a/325a.

« Bündnisvertrag zwischen Axos und Gortyn/Phaistos » (Chaniotis 1996 C : I.1 n° 13, dans l'intitulé à la page 214). De surcroît, il ne fait nulle part dans son commentaire du texte la moindre allusion à un statut de dépendance plus ou moins prononcé de Phaistos à l'égard de sa puissante voisine expansionniste. Cette optique grosso modo « égalitaire » découle peut-être de la vision de choses imposée en quelque sorte par l'analyse du contenu du décret commun n° 3a (voir *infra*) où, en effet, on a irréfutablement affaire à une espèce de partenariat unissant Gortyne et Phaistos. Toutefois, alors que dans le dernier document cité (n° 3a) à côté de la formule de promulgation τάδ' ἔαδε ταῖς πόλιθι ἀνφοτέραι|ς, τ<ᾶι> τ' ἄνω καὶ τᾶι κάτω (ll. 3–4) englobant expressément la désignation *polis* ayant trait tant à Gortyne qu'à Phaistos, figure aussi l'appellation de la cité de Phaistos accompagnée de son ethnique, l'une et l'autre en bonne et due forme, c'est-à-dire [τὸν] δὲ Φαίστιον Φαι<σ>τοῖ (l. 10), ce qui renforce davantage l'impression d'une relation d'égalité (Chaniotis 1996 C : III n° 71a, 423–425), il n'en est rien dans le document examiné n° 2, le nom de la ville — on sous-entend spontanément Phaistos à cet emplacement — y étant complètement absent. Au contraire, la formule τᾶι ἄνω πόλι καὶ τᾶι κάτω en apposition à seul l'ethnique de la cité de Gortyne (ll. 1–4, deux fois : Γορτυνίοις τᾶι ἄνω πόλι καὶ τᾶι κάτω) doit exprimer l'absorption dans la *chora* gortynienne de Phaistos réduite au statut de communauté (plutôt que cité) dépendante, Angelos Chaniotis arrivant par ailleurs à une conclusion similaire, exprimée pourtant de façon atténuée dans le commentaire supplétif afférent au témoignage n° 3a (voir ci-après ; Chaniotis 1996 C : III n° 71b, le commentaire à la page 426 avant toute autre chose). Une telle évolution n'aurait rien d'irrégulier compte tenu de la disproportion des potentiels des deux *poleis* rivales.

Le déroulement des événements dans la seconde moitié du III^e^ siècle mais avant l'éclatement de la guerre de Lyttos en env. 222/221 serait tel qu'alors que le *titulus* n° 1 (voir *supra*) refléterait, à n'en pas douter, une souveraineté, peu ou prou, substantielle de Phaistos vis-à-vis de Gortyne, le n° 2 illustrerait la subordination caractérisée de Phaistos à Gortyne. La suite n'est pas sans surprendre.

Phaistos de nouveau en sympolitie avec Gortyne

Cette suite qui n'est pas sans surprendre perce à travers un autre document épigraphique à peu près contemporain.

3a. Chaniotis 1996 C : III n° 71a (*IC* IV.165).

Fragment d'un bloc d'angle de pierre locale, déterré dans les décombres de l'église Mavropapas (ville basse de Gortyne) ; hauteur : 37 cm, largeur : 38 cm, profondeur : 29,5 cm. La face de droite porte le décret *IC* IV.163 (avec *SEG* XXVIII.732), tandis que sur le pilastre (« parastase ») sont gravés une concession de la proxénie *IC* IV.202, en haut, et notre *titulus IC* IV.165 (un autre décret), en bas. Écriture négligée, avec beaucoup d'erreurs, haute de 0,8–1,8 cm. Copié par F. Halbherr.

Ἐπὶ τῶν Δυμάνων κορμιόντων (τῶν) | σὺν Εὐρυβώιται τῶ Δαμασίλα[[ς]] | τάδ' ἔαδε ταῖς πόλιθι* ἀνφοτέραι|ς τ<ᾶι> τ' ἄνω καὶ τᾶι κάτω· κ<ό>ρμ[ο]|ς (?) ὁπεῖοί [[ο]] κα δίκαια μὴ συνθίων|ται ἀποτεισίοντ' ἀρ[[αρ]]γύρω ΧΧ | στατῆρανς πὰρ τὸν τίταν, | μωλῆν δὲ τὸν βωλόμενον, | τὸν μὲν Γορτύνιον Γ<ό>ρτυ[[ο]]νι | [τὸν] δὲ Φαίστιον Φαι(σ)τοῖ, καὶ ἔχε[ν] | [τὰν π]όλιν τὰ(ν) ἡμίναν, τὰν | [δὲ ἡ]μίναν τὸ(ν) μωλίο[[ι]]ντα.

Apparat critique : 4 *in fine*–5 *in initio*: Κρᾳ̣ν|σοπεῖοι ὅκα M. Guarducci conformément à la lecture établie par F. Halbherr ; sur la photographie prise par F. Halbherr on lit ΚΡΛΛ·|ΣΟΠΕΙΟΙΟ (A. Chaniotis) ; κρᾴ̣ν<α>ς ὁπεῖοί κα Wilhelm 1951 : 25–35 (voir également Bile 1988 : 205–206 § 31.3472.c).

* Relativement à la variante phonétique πόλιθι, nul doute, un faux archaïsme correspondant à πόλεσιν au datif pluriel des thèmes en -i, voir Bile 1988 : 196 § 31.332 avec n. 169 de bas de page.

Traduction : Sous le collège de cosmes élu dans la *phylè* Dymanès et présidé par Eurybotas fils de Damasilas, il a plu aux deux *poleis*, celle d'en haut et celle d'en bas : Que les cosmes** qui ne fixeraient rien de juste par une convention (?) paient XX statères d'argent auprès du magistrat responsable de la perception d'amendes, que celui qui veut intente un procès***, le Gortynien à Gortyne, le Phaistien à Phaistos, et la *polis* aura une moitié (*scil.* de l'amende), le plaignant l'autre moitié.

** Pour le sing. κόσμος au sens collectif, voir Bile 1988 : 312 § 43.2.c.

*** Concernant le verbe μωλέω (équivalant à μωλίω crétois), voir *LSJ*^9^ *s.v.* μωλέω (« contend, bring an action at law ») et Bile 1988 : 351 § 54.13 (« intenter un procès »).

Le n° 3a est datable soit — selon A. Wilhelm (1951 : 26–35) — de la période d'après 219 (de peu), soit — conformément aux conclusions auxquelles arrive E. Kirsten (1938 : 1606,$_{53}$–1607,$_{32}$) — entre 236 quand l'union Gortyne-Phaistos, comme cela se déduit du *titulus IC* IV.167 (Schmitt 1969 : n° 398), n'est pas encore entrée en vigueur et 222/221 quand éclate la guerre de Lyttos. Pareillement, A. Chaniotis (1996 C : III n° 71, 422, 426–428, dans le commentaire chronologique cumulatif

des témoignages n^os^ 71a–c) situerait volontiers le n° 3a entre env. 240 et 222.

La datation du décret n° 3a par seule la formule éponymique traditionnelle relative au collège de cosmes gortynien (ll. 1–2 : ἐπὶ τῶν Δυμάνων κορμιόντων (τῶν) | σὺν Εὐρυβώϊται τῶ Δαμασίλα[[ς]]), en l'absence d'une formule semblable en rapport avec Phaistos, ce qui n'est absolument pas une pratique courante dans la diplomatie intra-insulaire, tant s'en faut, ne doit pas nous induire en erreur pour ce qui est du statut politique de cette dernière : le décret, presque complet (hormis d'insignifiantes lacunes par ci par là, rien ne manque ni au début ni à la fin), a été érigé à Gortyne d'où l'abandon évident de l'emploi de formules superflues en vue d'une certaine concision facilement repérable dans le document, le décret analogue publié à Phaistos s'ouvrant, à coup sûr, par la formule éponymique avec la mention du collège de cosmes local phaistien.

Remarquons que E. Kirsten (1938 : 1607,$_{4–26}$) prend explicitement Phaistos pour une communauté dépendante de Gortyne et ceci, qui plus est, conformément au témoignage non du n° 2 (voir ci-dessus), inscription encore inconnue à l'époque de la rédaction de l'article pour la *RE*, mais justement du n° 3a, en déduisant le statut de dépendance de Phaistos principalement de cette particularité du n° 3a que le document est daté uniquement par la formule éponymique gortynienne :

> Die Bedeutung der Verbindung von Gortyn und P[haistos] speziell im Falle der Inschrift 5019 [*scil. SGDI*.5019 = n° 3a] kann nicht geklärt werden, solange nicht festgestellt ist, wer die Kransopeioi[8], über die bestimmt wird, sind. Guarducci hält sie für Perioiken, die unter die Aufsicht beider Städte gestellt werden. Nach den Ausführungen von Kirsten [*scil.* Kirsten 1936 : 80ff.] ist das wenig wahrscheinlich (eine Vermutung zu den Kransopeioi ebd. 87, 35), und eine gemeinsame Aufsicht ist wohl dadurch ausgeschlossen, daß über Gortyn und P[haistos] nur die Kosmoi von Gortyn bestimmen, P[haistos] also nicht mehr autonom ist (die Annahme der Nennung nur der Kosmoi von Gortyn wegen der Aufstellung in Gortyn wird durch den einhelligen Gebrauch aller Staatsverträge widerlegt, die stets die Beamten beider Vertragspartner nennen). Zur Zeit der Inschrift [*scil.* n° 3a] ist P[haistos] also von Gortyn abhängig, seine Rechtsstellung mit der der Chersonesier gegenüber Lyttos etwa zu vergleichen [...] oder andererseits mit seiner eigenen im 5. Jhdt. (Kirsten [*scil.* 1936] : 32, 76).

Ce qui est dit par E. Kirsten à propos du n° 3a appelle une mise au point. Ce ne sont aucunement les cosmes, gortyniens en l'occurrence[9], qui décident de quoi que ce soit au sujet de Gortyne et, simultanément, de Phaistos (« [...] über Gortyn und P[haistos] nur die Kosmoi von Gortyn bestimmen [...] »). Au collège de cosme gortynien, avec leur président, autrement dit le protocosme, mentionné, lui, nommément, on ne se réfère que pour dater le texte[10]. Par contre, comme c'est d'usage en Crète à cette époque, la prise de la décision incombait aux deux *poleis* — Gortyne et Phaistos — ce qui ne peut signifier qu'une chose, à entendre que le décret a été voté aux assemblées populaires des deux partenaires[11]. Il est indéniable, comme le met en avant E. Kirsten, que, en conformité avec les pratiques diplomatiques crétoises de l'époque, les textes des accords conclus entre les cités insulaires sont régulièrement datés par les formules éponymiques se rapportant à tous les partenaires présents dans l'accord. Néanmoins, on est toujours persuadé que la dérogation à la règle générale observée ici se justifie pleinement par ce fait que les rédacteurs du décret s'efforçaient nettement de rendre le résultat de leur travail inscrit sur la pierre le plus succinct possible. Enfin, tous les autres éléments que l'on vient d'analyser ne semblent pas corroborer la thèse d'un statut de dépendance de Phaistos à l'égard de Gortyne, qui s'exprimerait prétendument ici : dans le n° 2, assurément, mais pas dans le n° 3a — plus maintenant.

Se pose en définitive la question de savoir comment classer le statut de Phaistos si l'on exclut la dépendance concédant le gros des prérogatives civiques phaistiennes à Gortyne et en premier lieu la promulgation des décrets. Vu l'emploi du syntagme ταῖς πόλιθι ἀνφοτέραις τᾶι τ' ἄνω καὶ τᾶι κάτω aux lignes 3–4, force est de garder quand même une forme de dépendance ou, à la rigueur, d'interdépendance. La sympolitie s'y prête le mieux, d'autant plus que ses mécanismes étaient déjà bien connus et expérimentés des deux côtés. Et c'est exactement là que notre surprise fait son apparition parce qu'on ne s'attendrait guère à ce va-et-vient

[8] Telle est la lecture de la fin de la ligne 4 et du début de la ligne 5 du n° 3a établie à l'origine par F. Halbherr, retenue par M. Guarducci, mais écartée déjà par Wilhelm 1951 : 26–35 (*SEG* XIII.466) au profit de κράν|⟨α⟩ς ὀπεῖοί κα, puis, par A. Chaniotis (n° 3a), au profit de κ⟨ό⟩ρμ[ο]|ς? ὀπεῖοί [[ο]] κα (voir plus haut, l'*apparat critique* de l'inscription, *ad loc.*).

[9] La tribu dénommée Δυμᾶνες, dorienne par excellence, est largement répandue dans les cités à population justement dorienne, y compris dans l'île de Crète (Grote 2016 : 12–15, puis 242 ; Jones 1987 : 220–221 ; Perlman 2014 : 193 et 196), mais aucun doute ne peut planer sur le classement de la tribu du n° 3a sous Gortyne (Jones 1987 : 224 ; Perlman 2014 : 194).

[10] La formule éponymique y est banale : ἐπὶ τῶν Δυμάνων κορμιόντων (τῶν) | σὺν Εὐρυβώϊται τῶ Δαμασίλα[[ς]], ll. 1–2 (Pałuchowski 2005 : 30 n° 1).

[11] L'expression est tout aussi banale : τάδ' ἔαδε ταῖς πόλιθι ἀνφοτέραι|ς, τ<ᾶι> τ' ἄνω καὶ τᾶι κάτω, ll. 3–4 (Bile 1988 : 340 § 52.12.b pour l'époque hellénistique, ensuite Gagarin et Perlman 2016 : 57–61 §§ 4A1–4B1 pour les époques archaïque et classique). Signalons au passage que l'épigraphie phaistienne eût attesté la convocation des réunions de l'assemblée populaire vers la fin de l'époque archaïque, peu importe si la dénomination *agora* dans l'expression [---ϝ]εῖπαι | ἐν ἀγορ[ᾶι] au début d'un texte de loi situable dans la seconde moitié du VI^e^ siècle (Di Vita et Cantarella 1978 : 431,$_1$ [*SEG* XXXII.908]) désigne de fait le lieu des réunions ou la réunion elle-même (Perlman 2004 : 1180b).

statutaire très peu courant : sympolitie sous la houlette de Gortyne (milieu V^e^–milieu IV^e^ siècle) — souveraineté à la suite d'une rupture de la sympolitie (le témoignage n° 1) (milieu IV^e^–env. milieu III^e^ siècle) — communauté dépendante (le témoignage n° 2) (env. milieu III^e^ siècle) — de nouveau sympolitie sous la houlette de Gortyne (le témoignage n° 3a, en cours d'analyse) (datation à préciser). À l'appui d'une telle manière de voir les choses citons en entier deux autres témoignages épigraphiques dont le second nous conduira inévitablement à réévaluer non seulement la chronologie de l'érection du n° 3a mais aussi son contexte événementiel.

3b. *IC* IV.229.

Morceau d'un bloc calcaire, brisé de toutes parts, enchâssé d'abord dans un mur ancien s'élevant sur la route du village Mitropolis (situé à env. 1 km au sud-ouest de Gortyne), à proximité du champ de Χριστοδ. Ἀλεγιζάκης, et déplacé par la suite au village Aghioi Deka (situé à env. 2 km à l'est de Gortyne), chez Ἐμμ. Ἠλιάκης ; hauteur : 18 cm, largeur : 37 cm. Le lieu de l'affichage serait probablement à chercher du côté du temple d'Apollon pythien à Gortyne si seulement le monument n'était pas emporté de Phaistos à Gortyne. Écriture haute de 3 à 3,8 cm, avec un omicron d'assez moindre module et un phi à panse triangulaire et un peu allongée. Datation paléographique : III^e^ siècle. Relevé exécuté par F. Halbherr.

[----------|‥]ραῖοι Φαιστί[ων | πρό]ξενοι κ' αὐτο[ὶ | καὶ γέ]νος. | *vacat*

Traduction : (*Lacune*) [‥]raioi, proxènes de la cité de Phaistos (*litt*. des Phaistiens), eux-mêmes ainsi que leur descendance. (*Vacat*).

3c. *IC* IV.230.

Deux fragments contigus de pierre ordinaire, dont le fragment droit est rompu à droite ; hauteur : 26 cm, largeur totale : 105,5 cm (62 cm pour le fragment de gauche et 43,5 cm pour le fragment de droite). Comme certains autres débris utilisés en remploi dans la maison des frères Κουριδάκης, le monument devait être originellement inséré dans l'un des murs du temple d'Apollon pythien à Gortyne. Écriture haute de 5 à 7 cm. Datation paléographique : env. première moitié du II^e^ siècle. Dessin exécuté par F. Halbherr.

Νέανδρ[ο]ς, Σωσίνομ[ος,] | Σῶσος Λαππαῖοι | Φαιστίων εὐεργέτ[αι].

Traduction : Les Lappéens Neandros, Sosinomos, Sosos, évergètes de la cité de Phaistos (*litt*. des Phaistiens).

Les deux témoignages épigraphiques allégués (n^os^ 3b et 3c) montrent qu'il est donc bel et bien question d'une forme plus ou moins resserrée de sympolitie, avec Gortyne, il est vrai, en position de force et Phaistos plutôt en position de relative infériorité, n'empêche que le rapprochement s'arrête là, c'est-à-dire au stade de sympolitie et non de cité ou communauté dépendante. Les indices en sont, au fond, en nombre de deux : 1/ l'insertion dans les deux *tituli* de l'ethnique civique collectif Φαίστιοι (au génitif pluriel) et, en même temps, 2/ leur affichage quasiment certain dans l'enceinte du temple d'Apollon pythien, emplacement habituel, réservé à de telles fins à Gortyne. Trois Lappéens et au moins deux autres individus à une appartenance civique difficilement restituable[12] sont ainsi proclamés évergètes ou proxènes des Phaistiens — et uniquement des Phaistiens, sans la moindre référence aux Gortyniens —, la proclamation est pourtant affichée à Gortyne, dans une localisation prévue à cet effet. La datation paléographique du premier témoignage (n° 3b) s'étend sur tout le III^e^ siècle[13] et, par là même, n'apporte rien de nouveau à notre tableau des relations intervenant alors entre Gortyne et Phaistos. En revanche, la datation paléographique du second témoignage (n° 3c), dressé incontestablement dans la première moitié du II^e^ siècle[14], milite en faveur de la succession des statuts de Phaistos dans le courant du III^e^ siècle comme on vient de l'établir : souveraineté (le témoignage n° 1) à laquelle succède dépendance (communauté dépendante ; le témoignage n° 2) à laquelle succède nouvelle sympolitie (le témoignage n° 3a). Premièrement, sans qu'il y ait en fait un écart temporel considérable entre les deux, la paléographie du témoignage n° 2 semble être de toute façon antérieure à celle du témoignage n° 3a[15]. Deuxièmement, la datation irrécusable du n° 3c (première moitié du II^e^ siècle)

[12] Sur la pierre, de leur ethnique (au nominatif pluriel), il n'en reste que la terminaison -ραῖοι à la seconde ligne du n° 3b.

[13] La lettre la plus distinctive est un phi à une panse triangulaire, bien visible à la première ligne, voir *IC* IV.229 (pour le beau dessin exécuté par F. Halbherr) avec Chaniotis 1996 : 453 (pour la paléographie des caractères rencontrés sur les pierres crétoises) et 458 (pour la datation du caractère Φ4).

[14] La lettre la plus distinctive est, là encore, un phi à une panse ronde bien centrée et une haste sans empattements ni supérieur ni inférieur, facilement perceptible au début de la dernière, troisième ligne, voir *IC* IV.230 (un autre beau dessin que l'on doit à F. Halbherr) avec Chaniotis 1996 : 453 (pour le classement paléographique des caractères crétois) et 458 (pour la datation du caractère Φ5).

[15] La photographie du témoignage n° 2 reproduite dans Manganaro 1966 : fig. 2 (insérée entre les pages 16 et 17, « Tafel II »), en raison de l'écriture non soignée et de l'état de conservation de la face postérieure, n'est d'aucun secours mais il suffit de se fier au réexamen de la pierre accompli par A. Chaniotis et à son relevé des caractères observés, qui en résulte (la rubrique « Buchstabenformen » dans le lemme de son n° 13). En ce qui concerne le n° 3a, le *titulus IC* IV.165 est accompagné d'un superbe dessin dû, comme d'habitude, à F. Halbherr. Alors, afin de dater les deux numéros (2 et 3a), il faut prendre en considération, au premier chef, trois lettres — le sigma, l'upsilon (n^os^ 2 et 3a) et le phi (n° 3a). Or, tandis que le n° 2 déploie 1/ un sigma angulaire où l'angle inférieur formé par la diagonale et le pied est très serré par rapport à l'angle supérieur (Σ4, voir Chaniotis 1996 : 453, 457), puis 2/ un upsilon avec les diagonales (fûts obliques supérieurs) très écartés (Y1, voir Chaniotis 1996 : 453, 458), dans le n° 3a on aperçoit tout de suite 1/ un sigma lunaire (Σ1, voir Chaniotis 1996 : 453, 457), 2/ un upsilon avec les diagonales plus serrées (Y2, voir Chaniotis 1996 : 453, 458) et, enfin, 3/ un phi à une panse soit ovale soit, à peine une fois à la ligne 10, d'aspect ansé (Φ2 et Φ7, voir Chaniotis 1996 : 453, 458).

s'avère très difficile à concilier avec un déroulement des statuts dans lequel il serait indispensable de placer le statut attesté par le témoignage n° 2 après le statut attesté par le témoignage n° 3a, car, en fin de compte, cela aboutirait à une succession statutaire improbable comme suit : souveraineté (le témoignage n° 1) suivie de nouvelle sympolitie (le témoignage n° 3a) suivie, elle, de dépendance (communauté dépendante ; le témoignage n° 2) suivie, elle, de sympolitie pour la troisième fois (le témoignage n° 3c). Le principe de non-multiplication d'entités, énoncé par Aristote[16], nous pousse vers le choix du scénario précédent dans lequel une seule nouvelle sympolitie (la seconde dans l'histoire mouvementée de la rivalité exacerbée entre Gortyne et Phaistos) succède à la dépendance. Partant, au tournant du III^e^ au II^e^ siècle, comme le mettent en lumière les inscriptions n^os^ 3a–c, Phaistos exploite de nouveau la formule de sympolitie avec Gortyne, ce qui cadre à merveille avec le témoignage d'un traité d'alliance et d'amitié, que le roi Eumène II de Pergame conclut en 183 avec trente et une *poleis* (l'ethnique de la dernière à la ligne 8 est presque entièrement effacé) faisant partie du *koinon* crétois (Κρηταιεῖς au génitif pluriel Κρηταιέων à la ligne 3) et où Phaistos ouvre le bal à la troisième place, juste derrière les deux cheffes de file, Gortyne et Knossos, sans qu'on y discerne, par surcroît, la moindre trace de liens serrés avec Gortyne, qui pourraient s'exprimer, par exemple, dans le syntagme Γορτύνιοι καὶ Φαίστιοι, Κνώσιοι κτλ. au lieu de l'enchaînement Γορτύνιοι, Κνώσιοι, Φαίστιοι κτλ. (l. 3) sur la pierre[17]. S'il en est ainsi, il est grand temps de planter le témoignage n° 3a et la nouvelle sympolitie entre Phaistos et Gortyne dont il procède dans un cadre chronologique et événementiel, en s'efforçant d'esquisser de la sorte son contexte historique.

Il se trouve qu'une *stasis* prenant très vite les allures d'une vraie guerre civile se déclencha à Gortyne durant la guerre de Lyttos, entre 221/220 et 219 ou 218[18]. Voici ce qu'en est brièvement rapporté par Polybe[19] :

> Les Cnossiens, de concert avec les Gortyniens, avaient soumis à leur domination toute la Crète, excepté la ville de Lyttos ; ils résolurent de faire la guerre à cette cité, qui seule refusait de reconnaître leur autorité, et de la renverser de fond en comble, pour faire un exemple qui terrorisât le reste de l'île. Les Crétois s'unirent d'abord tous pour combattre contre les Lyttiens ; mais bientôt des contestations s'élevèrent entre eux pour fort peu de chose, ce qui est dans leur tempérament, et ils se divisèrent en deux camps. Les Polyrrhéniens, les Céraïtes, les Lappéens, ainsi que les Horiens et les Arcadiens, abandonnèrent les Cnossiens d'un commun accord et décidèrent de soutenir les Lyttiens. À Gortyne, des dissensions intestines éclatèrent : les gens âgés [πρεσβύτεροι] prirent fait et cause pour Cnossos, les jeunes [νεώτεροι] pour Lyttos. Les Cnossiens, effrayés par ces mouvements inattendus chez leurs alliés, appelèrent à leur aide une troupe de mille Étoliens. Sur ce, à Gortyne, le parti des gens âgés [πρεσβύτεροι] s'empara de la citadelle, y introduisit Cnossiens et Étoliens, chassa une partie des jeunes gens [νέοι], [en] massacra [une autre]* et livra la ville aux Cnossiens. [...]. [55.6] On vit encore les exilés [φυγάδες] de Gortyne s'emparer du port de Phaistos ; à Gortyne même, ils avaient su, par un beau coup d'audace, s'assurer également la possession du port, qui leur fournissait une base d'opérations contre le parti de la ville.
>
> * P. Waltz : « chassa une partie des jeunes gens, massacra le reste, etc. » ([...] καὶ τοὺς μὲν ἐξέβαλον, τοὺς δ' ἀπέκτειναν τῶν νέων κτλ.).

Pour faire court : on est convaincu que la nouvelle sympolitie entre Phaistos et Gortyne (témoignages n^os^ 3a–c) fut sinon l'œuvre, à tout le moins l'impulsion émanant de ces « jeunes » (*néotéroi*/*néoi*) révoltés contre les « vieux » (*presbytéroi*), qui, chassés de Gortyne, prirent le contrôle des *epineia* phaistien, Matala, et gortynien, Lébéna[20], et, au bout du compte, se fussent ou eussent été installés à Phaistos. Encore que l'historien ne fasse pas la moindre allusion à l'investissement de la cité de Phaistos même par les « jeunes » gortyniens en quête d'un point d'ancrage territorial fort, rappelons-nous que l'argument *e silentio* n'est jamais péremptoire, d'autant que la tendance à une certaine concision à la clôture du chapitre 55 où le dernier épisode (55.6) fermant la longue digression sur l'état des choses en Crète (4.53–55) est narré saute aux yeux à première vue. Il se peut que l'historien n'ayant pas eu entre les mains de renseignements fiables au sujet de la suite des opérations entreprises par les *néotéroi* gortyniens dans les parages de Phaistos[21] ait tout simplement voulu

[16] Aristote, *Ph.* 188a.17/18 (Ross ; *TLG* on-line) : βέλτιόν τε ἐλάττω καὶ πεπερασμένα λαβεῖν, ὅπερ ποιεῖ Ἐμπεδοκλῆς ce qui se traduit : « Il vaut mieux prendre des principes moins nombreux et finis, comme le fait Empédocle ».

[17] *IC* IV.179a$_{1–3}$: ἀγαθῆι τύχηι. ἐπὶ τοῖσδε συνέθεντο τὴμ φιλίαν καὶ συμα|χίαν ἑαυτοῖς τε καὶ ἐκγόνοις εἰς ἅπαντα τὸν χρόνον *vac.* βασι|λεὺς Εὐμένης καὶ Κρηταιέων *vac.* Γορτύνιοι, Κνώσιοι, Φαίστιοι κτλ. (avec Couvenhes 2016 : 190–191). Au sujet de la dénomination officielle du *koinon* crétois et de son histoire à l'époque de l'indépendance de l'île, voir Chaniotis 1996 : 30–32 ; 1999 : 289–295 ; Chaniotis et Kritzas 2010 (avec Faraguna 2010) ; Couvenhes 2016 : 205–207 ; Di Vita 2010 : 59b–61a ; Rouanet-Liesenfelt 1984 : 348 ; 1994 : 8–9 ; van Effenterre 1948 : 127–160 ; Velissaropoulos 1975.

[18] Concernant la guerre de Lyttos et, avant toute autre chose, sa chronologie, voir Chaniotis 1996 : 36–38 ; Sekunda 2011 : 81–82 ; van Effenterre 1948 : 253–254 ; Walbank 1957 : 508 (le commentaire du paragraphe 53.3).

[19] Polybe 4.53.4–54.1+55.6 (Büttner-Wobst ; *TLG* on-line), trad. P. Waltz 1921 (légèrement modifiée). À ce sujet, voir van Effenterre 1948 : 159–160 et Walbank 1957 : 508–511. Les troubles intestins à Gortyne sont situés par Di Vita 2010 : 61a et Sekunda 2011 : 81 entre fin 221 et 220.

[20] Polbye 4.55.6 (Büttner-Wobst ; *TLG* on-line). Pour ce qui est de l'identification des deux ports mentionnés par l'historien, voir *IC* I : *Praef.*, *Histor.*, page 269a, ensuite IV : *Praef.*, *Histor.*, page 21a ; Walbank 1957 : 511 (le commentaire du paragraphe 55.6) ; Chaniotis 1996 : 37 et, en dernier ressort, Di Vita 2010 : 61a.

[21] Walbank 1957 : 511 commentant le paragraphe 55.6 : « P[olybius] does not record the further outcome of this struggle etc. ».

s'en débarrasser au plus vite d'où résulte l'impression d'une coupure abrupte à la lecture de la transition entre le chapitre 55 (55.6) et le chapitre 56 (56.1). De ce fait que les « jeunes » gortyniens mirent le cap sur Matala M. Guarducci déduit une alliance trilatérale entre Phaistos, Knossos et les « vieux » de Gortyne[22]. Cela ne va toutefois aucunement à l'encontre de l'hypothèse de l'installation durable des « jeunes » à Phaistos même. En tout cas, quand bien même on se tromperait, cela vaut la peine de se trouver en excellente compagnie[23]. À part le passage polybien cité sur lequel on fonde l'hypothèse, on dispose d'autres indices concordants.

Deux missives adressées par les Knossiens et les Gortyniens aux Coens dans les mêmes circonstances de la guerre de Lyttos et de ses exécrables répercussions rendent hommage et accordent des privilèges habituels à Hermias fils d'Emmenidas, un médecin venu de l'île de Cos à la demande des intéressés pour soigner sur place, lors de son séjour de cinq ans, tous ceux qui en avaient besoin dans cette période des bouleversements profonds frappant la Crète[24]. La lettre knossienne fait état, à la quinzième ligne, des batailles livrées aux alentours de Phaistos[25]. Difficile de ne pas les rapprocher du récit polybien sur la prise de Matala par les jeunes exilés de Gortyne, comme le font les commentateurs[26]. On comprend alors l'absence de toute référence à de tels événements dans la lettre gortynienne dont ne fait défaut que la majeure partie de la section terminale où est invoqué le décret de concession du droit de cité et d'autres prérogatives qui allaient d'ordinaire avec (*IC* IV.168*, ll. 25 et suivantes [lacune après la ligne 26]).

Viennent ensuite les premières émissions monétaires phaistiennes de bronze. Et leur principal type de l'avers, très éloquent. Le monnayage en bronze débute à Phaistos entre les milieux du III^e^ et du II^e^ siècle — pour l'instant il est impossible d'être plus précis (Carbone 2017 : 155–156). Le type en question représente une figure masculine

Figure 4.1. 17 mm, groupe A, série 1 (E2021.618. Willi Fels Bequest ; Tūhura Otago Museum Collection –4,90 g. © Otago Museum, Dunedin, New Zealand).

Figure 4.2. 24.40 mm (Hunterian Museum : Hunter Phaestus 11–11,38 g. © The Hunterian, University of Glasgow).

Figure 4.3. Svoronos 1890 : pl. XXIII, n^os^ 2, 3 (seul l'avers) avec p. 255, n^os^ 4–6 (catalogue descriptif).

ailée que l'on identifie aisément avec Talos, un important héros de la mythologie crétoise (**Figure 4.1**)[27].

Il est évident que le type de l'avers, Talos, a dû être emprunté aux émissions phaistiennes d'argent (des statères) que l'on situe vers le milieu du III^e^ siècle (**Figure 4.2**)[28]. Le type du revers, le chien Λαῖλαψ, lui, n'est à retrouver que sur une rare émission d'argent (encore une fois des statères), datable du milieu du V^e^ siècle où, à l'avers, on le distingue debout, flairant la terre et associé à Talos, entre ses jambes écartées (**Figure 4.3**)[29].

On peut considérer Talos, en un mot, comme l'emblème par excellence de la cité de Phaistos puisqu'il fait son apparition au droit des pièces que l'on y bat, paraît-il, à chaque étape cruciale dans sa longue histoire mouvementée : au tout début du monnayage local (milieu

[22] *IC* IV : *Praef., Histor*., page 21a : « Illinc vero quod Gortyniorum iuniores Phaesti portum occupaverint, Phaestios id aetatis seniorum Cnossiorumque amicos fuisse colligitur ».

[23] Walbank 1957 : 511 apportant son commentaire au paragraphe 55.6 : « This* refers to the seizure of Phaestus by the "young" Gortynians. [...] ; the exiles had never been expelled from here** » ; * *scil.* κατελάβοντο δὲ καὶ τὸν λιμένα τῶν Φαιστίων οἱ τῶν Γορτυνίων φυγάδες κτλ., ce qui se traduit « Les exilés de Gortyne s'emparèrent du port de Phaistos » ; ** *scil.* from Matala, Phaestus and Lebena.

[24] *IC* I.viii.7* (la lettre des Knossiens) et IV.168* (la lettre des Gortyniens) avec le commentaire introductif de l'éditrice aux pages 231–232 (*IC* IV) où à la page 231b le séjour à Gortyne est daté entre env. 222 et 218. *LGPN* I : *s.v.* Ερμίας n° 45 date d'env. 200 ce personnage visiblement hors du commun connu par d'autres sources.

[25] *IC* I.viii.7*,~15~ : [...] πάλιν τε γενομένας μάχας περὶ Φαιστὸν κτλ. On est enclin à situer ces affrontements armés en env. 219, autrement dit vers la fin de la guerre de Lyttos, après la mise à sac et la démolition de Lyttos (*IC* I.xxiii : *Praef., Histor*., page 269a ; IV.168* : page 231b).

[26] À titre d'exemple M. Guarducci (*ad IC* I.viii.7*,~15~) ou Walbank 1957 : 508 (le commentaire du paragraphe 53.4), 509 (le commentaire du paragraphe 53.8) et 511 (le commentaire du paragraphe 55.6).

[27] On consultera Carbone 2017 : 150, avec Le Rider 1966 : 153 (surtout en note 4 infrapaginale), pour l'identification de la figure masculine à l'avers.

[28] C'est Carbone 2017 : 155 qui avance la datation approximative de ces pièces d'argent au type de Talos. Pour leur chronologie, voir également Le Rider 1966 : 147–148, pl. XXIV n^os^ 1–4 : *c.* 300–280 ou 270 (à la page 147). De même, voir Svoronos 1890 : 264 n^os^ 67–73 (catalogue descriptif), pl. XXIV n° 24.

[29] En ce qui regarde la datation de ces statères très anciens, voir Carbone 2017 : 155 ; Le Rider 1966 : 21–22 n^os^ 1–9 avec pl. III n^os^ 5–12, puis 86 n^os^ 9–11 avec pl. XX n^os^ 27–29 et XXI n^os^ 1–4, enfin 157–158 ; quant à l'identification du chien représenté sur les pièces d'argent et de bronze, voir Carbone 2017 : 150–151 et 155.

du V^e^ siècle, voire antérieurement)[30], puis en clôture de la période de la souveraineté s'étendant, rappelons-le, entre le milieu du IV^e^ et le milieu du III^e^ siècle (voir plus haut). Ce serait d'autant plus vrai si l'ouverture de ladite période — le milieu du IV^e^ siècle — était effectivement marquée, elle aussi, par la frappe de monnaies d'argent au type de Talos à l'avers[31]. Il est par conséquent tentant d'attribuer à cet emblème la valeur d'une espèce de manifeste iconologique.

Talos, dans la mythologie crétoise, était soit un géant soit un robot de bronze, qui, aux temps les plus reculés de Minos, revêtu d'une cuirasse et doté d'une vigilance infatigable, effectuait chaque jour trois rondes autour de l'île, en la défendant, si nécessaire, contre les invasions venues de l'extérieur. Il lançait alors des roches énormes sur les envahisseurs abordant en Crète et, en cas d'extrême urgence, les brulait en se jetant sur eux après avoir chauffé à blanc son buste de métal dans un feu. C'était soit Minos lui-même soit Zeus qui l'aurait choisi pour ce service vital (Grimal 1951 : *s.v.* Talos). Dans cette perspective, il n'est pas anodin que « [...] Phaistos, tout en étant dominée à partir de l'époque géométrique par une aristocratie qui utilisait le dialecte dorien, semble garder des relations très étroites avec le passé de l'âge du bronze, comme l'indique la continuité de fréquentation de la colline du palais et les traditions sur Minos, fondateur de la ville » (Lefèvre-Novaro 2014 : 65). Tout un programme iconologique donc, idéalement récupérable après que les « jeunes » rebelles gortyniens (à proprement parler seuls certains d'entre eux, vraisemblablement les plus agités et dangereux, mis à la porte[32]), opérant aux alentours de Phaistos vers la fin de la guerre de Lyttos, en 220 ou 219, conformément au témoignage polybien allégué in extenso ci-dessus, auront pénétré dans la ville elle-même, de quelque manière que cela dût se produire — par l'usage de la force[33] ou/et par voie de négociations et pourquoi pas avec le consentement obtenu bon gré mal gré des « vieux » tenant leurs quartiers à Gortyne ? Vu sous cet angle, Talos symboliserait traditionnellement les ambitions « souverainistes » de la nouvelle classe dirigeante de Phaistos, issue de l'admission en son sein des « jeunes » insurgés en errance, face à la superpuissance ennemie extérieure — Gortyne. Il n'est aucunement exclu que les cercles dirigeants phaistiens ne regardaient pas le moins du monde de mauvais œil un tel complément démographique — disons, une *anaplérosis* d'un certain genre, bien attestée à l'époque hellénistique (Sartre 2003 : 133–134) — puisque les *néotéroi* gortyniens apporteraient avec eux non seulement leur vigueur juvénile mais aussi leur exemplaire entraînement militaire[34], toujours utile quand il faut repousser les interminables assauts de sa belliqueuse et intrépide voisine.

Ce scénario a, en retour, l'avantage de nous permettre de dater avec un peu plus de précision tant la mise en circulation des premières monnaies phaistiennes de bronze (**Figure 4.1**) que les témoignages n^os^ 3a et 3b (la nouvelle sympolitie avec Gortyne) — postérieurement à l'an 220 ou 219, ce qui sous-tend un certain décalage entre les premiers bronzes et les émissions des statères au même type de Talos (milieu du III^e^ siècle), exactement comme le prend en compte F. Carbone[35]. Puis, le scénario avancé élucide parfaitement le rang auquel se hisse Phaistos dans la convention passée avec le roi attalide Eumène II, en 183 (voir ci-avant). Et enfin, fournit un contexte à la colère des Gortyniens contre les Phaistiens, qui dut grandir et se déchaîna vers le milieu du II^e^ siècle, en débouchant sur une catastrophe. Colère, voire fureur, s'il est admissible de l'aborder en termes de réaction, entre autres, à des perturbations sociales, voire révolutionnaires de l'ordre établi[36].

[30] Sheedy 2012 : 119 (au milieu du V^e^ siècle). D'après Polosa 2003 : 204–205 les premières pièces de monnaie d'argent crétoises ne sont pas frappées à l'extrémité occidentale de l'île, à Kydonia, mais dans le secteur centro-méridional, en Messara justement, à Gortyne et à Phaistos, le point de vue partagé par F. Carbone dans un courriel personnel daté du 12 octobre 2016.

[31] Sheedy 2012 : 120 avec fig. 6.25 (tant le type de l'avers que celui du revers — le taureau — et pareillement l'exergue ressemblent, à s'y tromper, à ce qu'on voit sur les deux photographies reproduites ici même, fig. 4.2).

[32] Polybe 4.53.9–54.1 (Büttner-Wobst ; *TLG* on-lien) : [...] καὶ τοὺς μὲν ἐξέβαλον, τοὺς δ' ἀπέκτειναν τῶν νέων κτλ. ou « [les *presbytéroi*] chassèrent une partie des jeunes gens, en massacrèrent une autre, etc. ».

[33] *IC* I.viii.7*$_{15}$: [...] πάλιν τε γενομένας μάχας περὶ Φαιστὸν κτλ., ces combats (μάχαι) étant mentionnés *supra*, à propos de Hermias fils d'Emmenidas, médecin envoyé à Gortyne et à Knossos par Cos.

[34] Sekunda 2011 : 76–77 : « The Greeks commonly referred to these young soldier-citizens who had completed their preliminary ephebic training as *neoi* (νέοι) or *neaniskoi* (νεανίσκοι), it seems. [...]. [page 77] In Crete, the units of the young formed the flower of the army. [...]. The young men of Crete will have been so sought after because of their youthful strength and enthusiasm, but also because their life under arms and their confinement to barracks made them the nearest equivalent to the standing army of the state. [...]. It seems, then, that the standing army of the Cretan state consisted of a core of *neoi*, possibly reinforced by a variable number of mercenaries. The dual composition of the Cretan standing armies is reflected in the Cretan treaties of *symmachia* with outside states ». De même, voir Couvenhes 2016 : 194 et 198.

[35] Carbone 2017 : 155 : « È difficile dire se queste monete frazionali [*scil.* le prime monete in bronzo] fossero in uso contemporaneamente con gli stateri o se il trasferimento del tipo dall'argento al bronzo implichi una distanza temporale, cet. ».

[36] Sekunda 2011 : 80–83. Couvenhes (2016 : 198) émet pourtant des réserves là-dessus. Lippolis (2016 : 157a) ne semble pas être très éloigné de l'interprétation des événements donnée par N.V. Sekunda, pour peu qu'un « groupe réformateur » (« the "reformist" group ») remplace un « groupe révolutionnaire » composé de *néoi*. Voir également Walbank 1957 : 509 (le commentaire du passage 4.53.7 de Polybe), puis 511 (le commentaire de 4.55.6) : « [...] but the war seems soon to have gone in favour of the Polyrrhenian group and so of the Gortynian "Young men" (VII. 11. 9 ; Plut. *Ar.* 48. 5, 50. 7) ». Di Vita (2010 : 61b–63a) se range du côté de G. Manganaro (1966 : 18–22) quand il ravive l'idée, plutôt minoritaire, de son prédécesseur selon laquelle les *néotéroi* polybiens seraient des Phaistiens fraîchement intégrés dans la citoyenneté gortynienne (« Festii-*neopolitai* di Gortina », page 62a), en somme une variante, semble-t-il, de l'interprétation formulée ici : « [...] mi sembra possibile aderire all'opinione di Manganaro, il quale [...] ha visto nella *stasis* dei *neoteroi* ricordata da Polibio non una rivoluzione interna al corpo dei Gortinii ma la contrapposizione di Gortinii e Festii. Secondo lo studioso i Festii sarebbero entrati a far parte della cittadinanza gortinia come *neopolitai*, e in realtà [...] non vi è dubbio che, almeno fra il 242, decreto di *asylia* per Kos, e la guerra di Lyttos, sulla base di *IC* IV, 165 [*scil.* témoignage n° 3a] e

Un accord final : Phaistos anéantie par Gortyne

C'est dans ces paroles que Strabon nous relate très succinctement l'anéantissement de Phaistos par Gortyne, accompagné, il va de soi, de l'absorption définitive de sa *chora* (10.4.14 [10.476] ; Meineke ; *TLG* on-line ; trad. Amédée Tardieu) :

> Des trois villes fondées par Minos, la dernière, Phaistos, fut détruite par les Gortyniens : elle était située à 60 stades de Gortyne, à 20 stades de la mer et à 40 du port de Matala. Quant à son territoire, il est encore occupé par ceux-là même qui l'ont détruite.

Le coup fatal est communément situé au milieu du II^e^ siècle[37]. Des tessons céramiques fouillés dans la couche de destruction dans la zone localisée à l'ouest de l'esplanade du théâtre (Piazzale del Teatro) aussi bien qu'un trésor composé de 600 pièces de monnaie d'argent dont une fraction importante est attribuable au règne du Séleucide Démétrios I^er^ Soter (162–150), découvert dans une tombe hellénistique au lieu-dit Phalangari à Voroi (Cucuzza 1997 : 87 ; La Rosa et Portale 1996/1997 : 360–361), prouvent l'exactitude de sa datation. Il n'en est pas autrement dans le cas de la mise au jour de trois tronçons de fortifications, dont la démolition remonte au milieu du II^e^ siècle (Bredaki et Longo 2018 : 37 ; Longo 2015a : 168 ; 2015b : 477).

Récapitulation

Récapitulons, au terme de l'enquête, la succession des statuts de Phaistos de l'époque classique à l'époque médio-hellénistique, succession en grande partie conditionnée par la rivalité mortifère avec sa puissante rivale Gortyne : 1) sympolitie sous la houlette de Gortyne (milieu V^e^–milieu IV^e^ siècle) ; 2) souveraineté à la suite d'une rupture de la première sympolitie (le témoignage n° 1 ; milieu IV^e^–env. milieu III^e^ siècle) ; 3) communauté dépendante (le témoignage n° 2 ; env. milieu III^e^ siècle–220/219) ; 4) à nouveau sympolitie sous la houlette de Gortyne[38] (220/219 ou peu après–milieu du II^e^ siècle).

Remerciements

L'auteur est ravi d'avoir enfin cette belle occasion d'offrir une courte investigation à George W. M. Harrison à titre d'hommage et de *xenia* personnels. On dit « enfin » puisque cela fait déjà un quart de siècle depuis que sa première rencontre bibliographique avec l'honoré, les Romains et la Crète a eu lieu.

Que messieurs Federico Carbone et Fausto Longo se voient ici chaleureusement remerciés pour leur précieuse contribution à l'élaboration de la présente enquête – l'un et l'autre ont eu la gentillesse de fournir à l'auteur les tirés à part des publications demandées. En outre, madame Moira White (Otago Museum, Dunedin, Nouvelle-Zélande) et monsieur Jesper Ericsson (The Hunterian Museum, Glasgow, Royaume-Uni) ont généreusement autorisé l'auteur à se servir de photographies des pièces de monnaie reproduites ici comme, respectivement, figures 4.1 (Tūhura Otago Museum Collection ; Willi Fels Bequest) et 4.2 (The Hunterian, University of Glasgow ; Dr William Hunter 1783 Bequest) – les remerciements les plus sincères leur sont aussi adressés.

Bibliographie

Le « a » accolé au numéro de la page signifie « colonne de gauche » et le « b » signifie « colonne de droite ». Le format est donc « 123a » ou « page 123a », « 123b » ou « page 123b » (à noter : sans espace, sans point).

Bredaki, M. and F. Longo. 2018. Phaistos Project (survey campaigns 2007–2011): five years of studies and surface investigations, in I. Gavrilaki (ed.) *Πεπραγμένα του ΙΑ΄ Διεθνούς Κρητολογικού Συνεδρίου (Ρέθυμνο, 21–27 Οκτωβρίου 2011)*, Vol. A2: 23–43. Rethymnon: Association on Historical and Folklore Studies in Rethymnon.

Bile, M. 1988. *Le dialecte crétois ancien. Étude de la langue des inscriptions. Recueil des inscriptions postérieures aux IC* (École Française d'Athènes, Études Crétoises 27). Paris : Librairie Orientaliste Paul Geuthner.

Brulé, P. 1978. *La piraterie crétoise hellénistique* (Centre de Recherches d'Histoire Ancienne 27, Annales Littéraires de l'Université de Besançon 223). Paris : Les Belles Lettres.

Carbone, F. 2017. La monetazione in bronzo di Festòs, in S. De Caro, F. Longo and M. Scafuro (eds) *Percorsi. Scritti di Archeologia di e per Angela Pontrandolfo*,

di Chaniotis 1996, n. 13 [*scil.* témoignage n° 2] [...], la *sympoliteia* di Festòs con Gortina si tradusse in una sudditanza dei Festii, "quelli della città bassa", nei confronti dei Gortinii, "quelli della città alta". Essi ebbero un solo ed unico *Bürgerrecht*, quello gortinio » (page 61b). Et il y en aurait encore une, à trouver chez F. Driessen-Gaignerot (2006 : 181–186) à qui un glissement de sens de fonction et classe d'âge à catégorie/classe sociale permet de faire correspondre les *néotéroi* polybiens aux Néocrétois connus par d'autres sources, en gros, contemporaines, en l'occurrence « de nouveaux citoyens crétois [*scil.* gortyniens] issus des classes inférieures » (pages 185–186), expulsés de leur cité d'adoption politique vers la « ville basse », dans ce cas-là Phaistos.

[37] Cucuzza 1997 : 87–90 ; Di Vita 2010 : 60b ; Watrous et Hadzi-Vallianou 2004 : 326a ; et ceci chez E. Lippolis (2016 : 158a) : « A *sympoliteia* was concluded with Phaistos before 183 BC [...], which decreed a subordinate position for the latter [*scil.* with regard to Gortyn], before losing its status as polis towards the middle of the century. Phaistos was permanently abandoned, with the exception of a few structures, and some of the people of Phaistos may have been transferred into the Gortynian urban area, as in other analogous cases ».

[38] Voir les témoignages n^os^ 3a–c, les premières oboles frappées à Phaistos au type de Talos (Figure 4.1) et le traité d'alliance et d'amitié conclu par 31 cités insulaires, « confédérées » au sein du *koinon*, avec le roi attalide Eumène II en 183.

Vol. II: *Scritti di Archeologia per Angela Pontrandolfo*: 149–162. Paestum: Pandemos.

Chaniotis, A. 1996. *Die Verträge zwischen kretischen Poleis in der hellenistischen Zeit* (Heidelberger Althistorische Beiträge und Epigraphische Studien 24). Dritter Teil (C) — Texte und Testimonien. Stuttgart: Franz Steiner Verlag.

Chaniotis, A. 1999. The epigraphy of Hellenistic Crete. The Cretan *Koinon:* new and old evidence, in S. Evangelisti and L. Galli (eds) *XI Congresso Internazionale di Epigrafia Greca e Latina, Roma 18–24 settembre 1997, Atti*, Vol. I: 287–299. Rome: Edizioni Quasar.

Chaniotis, A. and Ch. Kritzas. 2010. Prozeßrechtliches aus dem hellenistischen Kreta, in G. Thür (ed.) *Symposion 2009. Vorträge zur griechischen und hellenistischen Rechtsgeschichte (Seggau, 25.–30. August 2009)* (Akten der Gesellschaft für Griechische und Hellenistische Rechtsgeschichte 21): 169–183. Vienne: Verlag der Österreichischen Akademie der Wissenschaften.

Couvenhes, J.-Ch. 2016. Quelques remarques sur le recrutement des soldats crétois outre-mer à travers les traités de *symmachia*, in J.-Ch. Couvenhes (ed.) *La symmachia comme pratique du droit international dans le monde grec. D'Homère à l'époque hellénistique* (*Dialogues d'histoire ancienne*, Suppl. 16) : 177–211. Besançon : Presses universitaires de Franche-Comté.

Cucuzza, N. 1997. Considerazioni su alcuni culti nella Messarà di epoca storica e sui rapporti territoriali fra Festòs e Gortina. *Atti della Accademia Nazionale dei Lincei. Classe di scienze morali, storiche e filologiche* (Rendiconti della reale Accademia dei Lincei) 9.8: 63–93.

Di Vita, A. 2010. *Gortina di Creta. Quindici secoli di vita urbana* (Bibliotheca Archeologica 45). Rome: L'Erma di Bretschneider.

Di Vita, A. and E. Cantarella. 1978. Iscrizione arcaica giuridica da Festòs. *Annuario della scuola archeologica di Atene e delle missioni italiane in Oriente* 56 [1982]: 429–435.

Driessen-Gaignerot, F. 2006. Pression sociale et descente vers la mer en Crète à la période hellénistique, in Th. Detorakis and S. Papadaki-Oekland (eds) *Πεπραγμένα του Θ΄ Διεθνούς Κρητολογικού Συνεδρίου (Ελούντα, 1–6 Οκτωβρίου 2001)*, Vol. A5: 179–188. Herakleion: Hetaireia Kretikon Historikon Meleton.

Faraguna, M. 2010. Legal procedure in Hellenistic Crete. Response to Angelos Chaniotis, in G. Thür (ed.) *Symposion 2009. Vorträge zur griechischen und hellenistischen Rechtsgeschichte (Seggau, 25.–30. August 2009)* (Akten der Gesellschaft für Griechische und Hellenistische Rechtsgeschichte 21): 185–191. Vienne: Verlag der Österreichischen Akademie der Wissenschaften.

Gagarin, M. and P.J. Perlman. 2016. *The Laws of Ancient Crete c. 650–400 BCE.* Oxford: Oxford University Press.

Gauthier, Ph. 1972. *Symbola. Les étrangers et la justice dans les cités grecques* (Annales de l'Est, Mémoires 42). Nancy : Université de Nancy II.

Grimal, P. 1951. *Dictionnaire de la mythologie grecque et romaine*. Paris : Presses Universitaires de France.

Grote, O. 2016. *Die griechischen Phylen. Funktion — Entstehung — Leistungen*. Stuttgart: Franz Steiner Verlag.

Jones, N.F. 1987. *Public Organization in Ancient Greece. A Documentary Study* (Memoirs of the American Philosophical Society 176). Philadelphia: American Philosophical Society.

Kirsten, E. 1936. Die Insel Kreta im fünften und vierten Jahrhundert. Unpublished PhD dissertation, University of Leipzig.

Kirsten, E. 1938. Phaistos, 3, in *Paulys Realencyclopädie der classischen Altertumswissenschaft* 19/2: 1596,$_{57}$—1608,$_{46}$.

La Rosa, V. and E.C. Portale 1996–1997. Le case ellenistiche ad ovest del Piazzale I a Festòs. *Annuario della scuola archeologica di Atene e delle missioni italiane in Oriente* 74–75 [2000]: 215–395.

Lefèvre-Novaro, D. 2014. *Du massif de l'Ida aux pentes du mont Diktè. Peuples, territoires et communautés en Messara (Crète) du XIII^e^ au VII^e^ siècle av. J.-C.*, Vol. I : *Interprétation des données* (Collections de l'Université de Strasbourg, Études d'archéologie et d'histoire ancienne). Paris : De Boccard.

Le Rider, G. 1966. *Monnaies crétoises du V^e^ au I^er^ siècle av. J.-C.* (École Française d'Athènes, Études Crétoises 15). Paris : Librairie Orientaliste Paul Geuthner.

Lippolis, E. 2016. Roman Gortyn: from Greek polis to provincial capital, in J.E. Francis and A. Kouremenos (eds) *Roman Crete. New Perspectives*: 155–174. Oxford: Oxbow Books.

Longo, F. 2015a. Considerazioni preliminari sulla topografia della città greca di Festòs, in D. Lefèvre-Novaro, L. Martzolff and M. Ghilardi (eds) *Géosciences, archéologie et histoire en Crète de l'Âge du Bronze récent à l'époque archaïque. Actes du colloque international pluridisciplinaire de Strasbourg, 16–18 octobre 2013 :* 159–181. Padoue : Bottega d'Erasmo.

Longo, F. 2015b. Phaistos project. The Greek polis in the light of recent topographic studies, in P. Karanastasi, A. Tsigounaki and C. Tsigonaki (eds) *Αρχαιολογικό Έργο Κρήτης 3, Πρακτικά της 3ης Συνάντησης, Ρέθυμνο, 5–8 Δεκεμβρίου 2013*, Vol. A: 465–481. Rethymnon: Faculty of Letters Publications, University of Crete.

Manganaro, G. 1966. Iscrizione opistographa di Axos con prescrizioni sacrali e con un trattato di Symmachia. *Historia* 15.1: 11–22.

Milet I.3 = Kawerau, G. and A. Rehm (eds) 1914. *Das Delphinion in Milet. Milet* 3. *Ergebnisse der Ausgrabungen und Untersuchungen seit dem Jahr 1899*. Berlin: Reimer, 1906–.

Pałuchowski, A. 2005. *Fastes des protocosmes des cités crétoises sous le Haut Empire* (Acta Universitatis

Wratislaviensis 2828, Antiquitas 27). Wrocław : Wydawnictwo Uniwersytetu Wrocławskiego.

Perlman, P.J. 2004. Crete, in M.H. Hansen and T.H. Nielsen (eds) *An Inventory of Archaic and Classical* Poleis*. An Investigation Conducted by the Copenhagen Polis Centre for the Danish National Research Foundation*: 1144–1195. Oxford: Oxford University Press.

Perlman, P.J. 2014. Reading and writing Archaic Cretan society, in O. Pilz and G. Seelentag (eds) *Cultural Practices and Material Culture in Archaic and Classical Crete. Proceedings of the International Conference, Mainz, May 20–21, 2011*: 177–206. Berlin: De Gruyter.

Polosa, A. 2003. Una rilettura di M.I. Stefanakis, The introduction of coinage in Crete. *Annali dell'Istituto Italiano di Numismatica* 50: 199–206.

Raaflaub, K.A. 2004. *The Discovery of Freedom in Ancient Greece*. Chicago: University of Chicago Press.

Rouanet-Liesenfelt, A.-M. 1984. Le crétarque Kydas, in *Aux origines de l'hellénisme : la Crète et la Grèce. Hommages à H. van Effenterre, présentés par le Centre G. Glotz* (Histoire ancienne et médiévale 15) : 343–352. Paris : Publications de la Sorbonne.

Rouanet-Liesenfelt, A.-M. 1994. Remarques sur l'assemblée provinciale crétoise et son grand-prêtre à l'époque du Haut-Empire. *Ktèma* 19 : 7–25.

Sartre, M. 2003. *L'Anatolie hellénistique de l'Égée au Caucase (334–31 av. J.-C.)* (Collection U, Histoire). Paris : Armand Colin.

Schmitt, H.H. 1969. *Die Staatsverträge des Altertums*, Vol. III: *Die Verträge der griechisch-römischen Welt von 338 bis 200 v. Chr*. Munich: C.H. Beck.

Sekunda, N.V. 2011. Neocretans, in J.-Ch. Couvenhes, S. Crouzet and S. Péré-Nogués (eds) *Pratiques et identités culturelles des armées hellénistiques du monde méditerranéen* (Hellenistic Warfare 3, Scripta Antiqua 38) : 75–85. Bordeaux : Ausonius Éditions.

Sheedy, K. 2012. Aegina, the Cyclades, and Crete, in W.E. Metcalf (ed.) *The Oxford Handbook of Greek and Roman Coinage*: 105–127. Oxford: Oxford University Press.

Svoronos, J.-N. 1890. *Numismatique de la Crète ancienne.* Mâcon : Imprimerie Protat Frères.

Tamiolaki, M. 2010. *Liberté et esclavage chez les historiens grecs classiques* (Hellenica). Paris : Presses de l'Université Paris-Sorbonne.

van Effenterre, H. 1948. *La Crète et le monde grec de Platon à Polybe* (Bibliothèque des écoles françaises d'Athènes et de Rome 163). Paris : De Boccard.

Velissaropoulos, J. 1975. Remarques sur le « diagramma des Crétois ». *Revue historique de droit français et étranger* (4e série) 53.1 : 36–47.

Walbank, F.W. 1957. *A Historical Commentary on Polybius*, Vol. I: *Commentary on Books* I–VI. Oxford: Clarendon Press.

Watrous, L.V. and D. Hadzi-Vallianou. 2004. The polis of Phaistos: development and destruction (Late Minoan IIIC–Hellenistic), in L.V. Watrous, D. Hadzi-Vallianou and H. Blitzer (eds) *The Plain of Phaistos. Cycles of Social Complexity in the Mesara Region of Crete* (Monumenta Archaeologica 23): 307–338. Los Angeles: Cotsen Institute of Archaeology.

Wilhelm, A. 1951. *Griechische Inschriften rechtlichen Inhalts* (Pragmateiai 17.1). Athènes: Akademia Athenon.

5.

Onomasticon and Social Identity on the Cretan Coins in the Late-Hellenistic and Roman Periods: A Case Study

Vassiliki E. Stefanaki

Introduction

Many studies on Roman Crete have clearly shown that the Roman domination on the island after 67 BC and its integration in the *imperium* in the late-1st century BC had an impact on its political, economic and social environments that were in place from before the Roman conquest. Nevertheless, the late-Hellenistic period probably constitutes a period of transition from the aforementioned changes of the Imperial times. During this period, the territorial expansion of the Cretan cities that was probably accompanied by a specialised agricultural production, the economic benefits from the application of harbor, customs and transshipment fees (Viviers 1999), mainly in the larger harbors/settlements where quays offered berthing facilities, the intra-island maritime trade, and the minimal off-island trade of its own products (e.g., wine, olive oil) mainly through transit,[1] as well as the activity of the *negotiatores*, have probably affected the agro-pastoral economic system of the conservative Cretan society and encouraged the emergence of other social classes, such as merchants and craftsmen.

In Roman times, the changes are apparent in the political field with the loss of independence and the coming of colonists to Knossos, the unification of the island under an emperor and the establishment of a provincial administration, the adaptation of the existing local institutions and legislation to the new Roman reality, and the decrease in the number and functions of *kosmoi* (Tzamtzis 2013: 246–247; also below); The economy transformed with the reorganisation of territorial boundaries, the standardisation and commercialisation of production (wine, honey, textiles, medical plants), the organised, massive export trade in new and extended economic networks due to the *pax romana* (Chaniotis 2008: 88–91), and the probable tributary status of most of the cities of the island (Chaniotis 2008: 87; Harris 1999: 356, 358). Society was altered with the composition of the governing class by *cives Romani*, the installation of a Roman population and the migration of foreigners (Chaniotis 2008: 94; Harrison 1993: 178), the clientelism and the diffusion of the *civitas Romana*, the Romanised families, the disappearance of the previous military character of the local upper classes, whose wealth was based mainly on land ownership and the development of a new elite of entrepreneurs of local and foreign origin, the appearance in inscriptions of more social groups (women, foreigners, slaves, freedmen, artisans), and finally in the mentality, from the local, communal and impersonal spirit of the previous periods to the cosmopolitanism, the pan-Cretan identity, and the individuality of the late-Republican and Imperial periods (Chaniotis 2004, 2008: 91–93). Besides the small number of remaining Latin inscriptions, Roman influences can also be seen in the language of Greek inscriptions, with the use of the Latin terminology and the intrusion of Latin into Greek or *vice versa* (Baldwin Bowsky 2006: 415–416, 2007: 198),[2] as well as in religion, mainly with the emperor's cult — means of cohesion of the Empire and of integration of the provinces into the imperial system and its political and social values (Rizakis 2015: 144, 2018: 273, n. 6) — the monetary types (Lagoyianni-Georgakarakou 1995) and weight standard, the urbanisation, the architecture, the living and the material culture (Chaniotis 2008: 93–96; Pałuchowski 2011; Sonnabend 2004).

Specialists of this historical period address processes of Romanisation or acculturation (Baldwin Bowsky 2004: 96, n. 1; Chaniotis 2008: 94; Katsari 2006: 87–95; Rizakis 1993: 28–29; Sweetman 2006) — visible in the material culture of most of the Cretan cities and also in the Roman colony of Knossos, mainly from the 1st century AD and so much later than the Roman conquest and the island's integration into the Roman *imperium* (Sweetman 2006) — or rather of cultural mixing, in which different traditions and tendencies intersect.

[1] As W. Harris (1999: 357) argues, there is 'a somewhat exaggerated contrast between a traditional Cretan economy characterized by subsistence and autarchy and a more developed wine-exporting economy made possible by the Roman peace'. See also Chaniotis 2005; Gagarin and Perlman 2016: 116–117. For a detailed discussion, see Stefanaki 2021: 137–161.

[2] On the language used in the inscriptions of Knossos, see Baldwin Bowsky 2004; Tzamtzis 2013: 235.

Greek elements predominate (Pałuchowski 2011), a fact which confirms the persistence of the island's cultural integrity and identity (Baldwin Bowsky 1995; Chaniotis 2008: 95–96). The spread of Romanness with the progression of the *civitas Romana* on the island, more visible in coastal and urban areas (Baldwin Bowsky 1995: 42, 54), was also slow, limited and unequal (Pałuchowski 2011: 300, n. 5, 2012: 134–139). There are no widespread groups with the same *nomen gentilicium*, but a remarkable variety of *nomina* which go back to the period of the *Republica* as well as to that of the *Imperium* (Tzamtzis 2013: 172, 452–453). Some of these names are related to the *negotium*, a source of Roman influence and evidence of Italian patronage from the 1st century BC (Baldwin Bowsky 1995: 25).

Therefore, it was mainly the imperial and local patronage, as well as the frequent contact and the reciprocal exchanges between the Roman administration and local authorities, acting as a mediator between the former and the cities in the social, cultural and political life (Rizakis 2015), which contributed to an acculturation of the local elites from the second half of the 1st century AD and mainly in the 2nd century, as evidenced by the integration of their representatives into the Roman governing class and the administration of the Empire. This collaboration with the imperial power thus allowed them to maintain the monopoly of local functions and access to important positions at the provincial level (Rizakis 2018: 273). Individuals or members of families of Cretan provenance with Italian descent or Romanised Cretans from eminent families obtained the equestrian or senatorial rank after a previous municipal and provincial career (Baldwin Bowsky 1994: 32–35, 1995: 60–62), a well-known pattern of social elevation of the great families of the Greek East in the society of the empire (Rouanet-Liesenfelt 1997: 24; Rizakis 2015: 144). Rich families of the Cretan cities continued to play their traditional 'aristocratic' role and maintain good relations between them (Baldwin Bowsky 2001a, 2011; Chaniotis 2008: 93; Harrison 1993: 122), but they now belonged to a new international aristocracy through marriage with the members of the Italo-Roman elite (Baldwin Bowsky 1995: 62) and adoption. However, they did not assimilate themselves to the Romans and their values, and instead confirmed the attitude 'Becoming Roman, staying Greek' of the local notables of the Greek cities and their 'twin attachment to Rome and their homeland' (Rizakis 2015: 144–145, 154).

Nevertheless, between these important families, which were not numerous in the Greek cities (Rizakis 2018: 273, n. 7), as well as in Crete (Chaniotis 2008: 93), and the *plebs urbana*, existed an intermediary class of notables, which played also an important role, but only at the local level. In fact, as A. Rizakis argues (2018: 291), the difference between this local elite and the few wealthy families involved in provincial or imperial administration can be seen in the larger network of political, economic and social relations of this last group with other noble Greek and mainly Roman families.

The question now is what the Cretan coins can tell us about the society and the social changes on the island? According to P. Weiss 'the coins are in their types and inscriptions a representation of the notions entertained by the cities, or more precisely by their upper class' (Weiss 2005: 68; also Von Reden 1997: 168). Therefore, the purpose of this paper is to examine the social identity as seen through the onomastic evidence on the coinage minted in the late-Hellenistic and Roman periods, and the impact of the Romans on Cretan society, mainly in the local *archai*, who identify themselves on coins by individual names. As O. Picard points out (1997: 33), the monetary production was not a function of the wealth or importance of the activities of a city, but the coinage was the result of a political decision that tells us more about the *politeia* of the city, both its institutions and the social practices that structure the life of a community.

A short historical and monetary context

The period between the late-2nd century and 30 BC coincides with a time of political turmoil and realignments on the island, due to the Mithridatic and the Roman Civil Wars, as well as by the Metellus' conquest in 67 BC and the provincialisation of the island.

Written sources testify to the relations between Crete and the Romans from the beginning of the 2nd century BC, especially with their interventions in territorial conflicts on the island (Harrison 1988: 133–134; Spyridakis 1979) and also with the action of the Roman or Italian *negotiatores* who had begun to show some interest in this region since the 2nd and mainly the 1st century BC (Baldwin Bowsky 1994, 2001). Plutarch (*Lucullus* 2.3) reports an agreement of *c.* 85 BC between the Cretan cities and the Romans during the expedition of Lucullus, general of Sulla, on Crete. The Roman intervention on the island since the 80s and its conquest in 69–67 BC was probably motivated by political, military, as well as economic interests.[3] The ultimate effort of unity that the Cretan cities, known for their incessant wars, showed in front of the Roman Senate in 70/69, after the second failed expedition of Marcus Antonius in 72/1, in order to renew their bonds of friendship and to win his support, was in vain (Cicero, *Pro lege Manilia de imperio Cn. Pompei oratio* 46). Between 69 and 67 BC, the last expeditions of the Romans, described by Dio Cassius, Titus Livius, Appian,

[3] For the bibliographical references, see Stefanaki 2021: 131–132. However, see also Harrison 1998.

and Florus, are those of L. Cornelius Sisenna — replaced after his death by Octavius, the lieutenant of Pompey — and Metellus (Baldwin Bowsky 2001b; De Souza 1997; Piatkowski 1973; Tsougarakis 1987: 289–292; Tzamtzis 2013: 37–68).

Due to this Roman political and/or military involvement in the island in the late-Hellenistic period, Roman influences were already attested on the types and technical characteristics of the local coins minted before the Roman conquest in 67 BC, such as on the drachms of a reduced Cretan standard[4] of Kydonia with the head of Athena-Roma on the obverse and the bitch suckling infant on the reverse minted between 189 and 184 BC (Stefanakis 1997: 241) and on the silver coinage (tetradrachms and fractions) of a Cretan weight standard with civic and pseudo-Athenian types issued by probably twelve Cretan mints (Polyrrhenia, Kydonia, Aptera, Lappa, Axos, Knossos, Gortyn, Arkades, Lyttos, Priansos, Lato and Hierapytna) in the first third of the 1st century BC in order to cover their own military needs and/or those of the Romans, or initiated by the Romans themselves (pseudo-civic coins).[5] Cretan coins of this period attest to the Roman influence on the island: the Roman fashion of the labyrinth's circular form depicted on the tetradrachms of Knossos (Mielczarek 2013); the male heads resembling Roman portraits on the bronze coins of Hierapytna; the symbol of the elephant head figured on the Knossian bronzes, and the Metellus tetradrachms with the head of Roma on the obverse and the cult image of Artemis Ephesia on the reverse minted by Gortyn a little before or after the Roman conquest — these carry as symbols the monogram of Q. Caecilius Metellus, the elephant head and the prow, a clear reference to the conqueror and his family (*RPC* I: 216–217, nos 901–903, pl. 51; Metenidis 1998), and letters or names on the obverse (Stefanaki and Carrier 2020: 253).

After the Roman conquest, Crete became a Roman province administered jointly with Cyrenaica. However, ambiguity arises from the few testimonies of written sources about the date of the creation of this double *provincia Creta et Cyrenaica*, the evolution of its geographical boundaries and the variations in its administrative unity until the time of the division of the provinces in 27 BC, when Crete and Cyrenaica were officially combined in a senatorial province governed by a proconsul with praetorian rank. Therefore, the status of Crete between 67 and 27 BC remains uncertain, and differing views were expressed in the testimonies of Cicero (*Philippics* 2.38.97, 5.5.13) about the *immunitas* and the *libertas* of the island — or of one part of it — mainly during Antony's period (43/2–31 BC), the existence of a *Koinon* or a confederation under the leadership of a Cretarch, the extent of the Ptolemaic possessions on the island due to the grant of Antony to Cleopatra (Dio. 49.32.4–5), the date of the creation of the Roman colony of Knossos (36 BC, 30 BC, or after the acquisition of the title of Augustus by Octavian in 27 BC), its connection with Capua in Campania (Dio, 49.14.4–15), and its military or more probably civilian nature (Baldwin Bowsky 2002, 2004: 98–101; Carrier and Chevrollier 2016; Chapman 1968; Harrison 1988: 140–144, 1993: 57; Lefebvre 2013; Rouanet-Liesenfelt 1984; Sanders 1982: 5–6; Sweetman 2006; Tsougarakis 1987: 293–294; Tzamtzis 2013: 80–81, 227–233, 258–274).

During the first three decades of Roman rule, the local currencies in silver already in circulation covered the needs of the market in Crete, as evidenced by the hoards buried after the Roman conquest (Touratsoglou and Sidiropoulos 1995: 290). Moreover, the circulation of Roman Republican *denarii* in Crete is mainly attested from the mid-1st century BC (for references, see Stefanaki and Carrier 2020: 254). Even in the 1st century AD, Roman coinage did not circulate much on the island, an image which changed from the time of Nero and mainly in the middle of the 2nd century (*RPC* I: 10; *RPC* II: 48; Sidiropoulos 2004: 208–210).

Changes in the Cretan monetary system with the adoption of the Roman one occur after the Metellus tetradrachms (Metenidis 2004: 174–178; *RPC* I: 226–227), which are followed by four provincial bronze issues — head of Roma/bee;[6] two series of L. Lollius and Crassus; issue of the pro-quaestor P. Lepidius with bust of Libya/bust of Artemis — minted between 67 and 23 BC, or more probably between 44 and 27 BC (*RPC* I: 217–21),[7] and intended to serve both Cyrenaica and Crete, whose types faithful to local traditions also attest to Egyptian and Roman influences. In the same period and probably between 40s and 30s BC, rare cistophoric tetradrachms in the name of Kydas the Cretarch were issued probably in the mint of Gortyn, as well as a civic Knossian bronze coinage with personal names inscribed on the reverse, which is overstruck on coins of Crassus and thus adapted to the Roman system of denominations (Buttrey 1987: 171; Chapman 1968; Price 1982–1983: 120; *RPC* I: 223).[8]

[4] On the weight standard used by the Cretan cities in the Classical and Hellenistic periods, see Stefanakis 1999; 2007–2008; Stefanaki and Stefanakis 2013; Stefanaki and Carrier 2020.

[5] For a discussion about the purpose or purposes of minting in Crete between the end of the 2nd century and the first third of the 1st century BC, see Stefanaki and Carrier 2020. F. de Callataÿ (2016: 333) mentions that 'numismatic research has long been deceived by the conspicuously civic character of several coinages, especially when they display a rich array of names known to be local through epigraphic evidence'. However, see Picard 2010: 189–190.

[6] On the attribution of this issue to Cyrenaica, see Asolati 2009.

[7] On the different views concerning the chronology of these issues depending on the date of the association between Cyrenaica and Crete in a double province, see Chevrollier 2015; Carrier and Chevrollier 2016.

[8] On the uncertain Knossian attribution of rare *cistophori* of the propraetor Q. Lepidus, see Tansey 2008. On the bronzes of Lappa with the head of Poseidon and the trident with the dolphins (Svoronos 1890: no. 1, pl. XX), which, according to metrological and stylistic

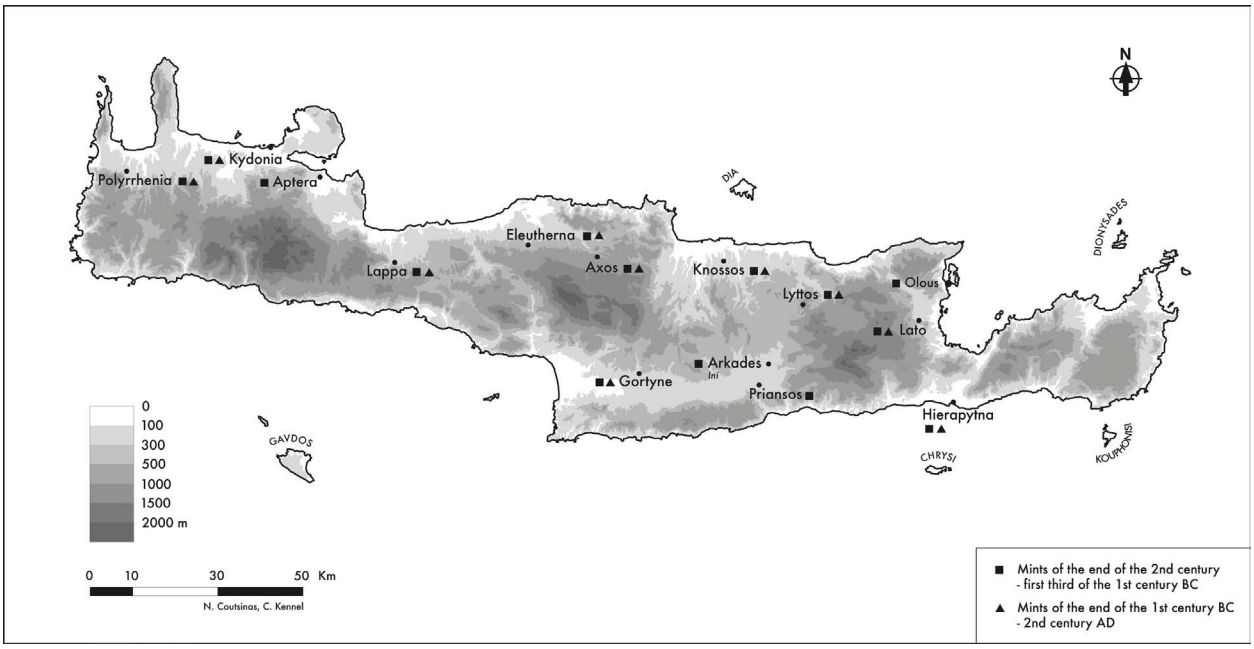


Figure 5.1. Map of Crete, with locations of mints (map by N. Coutsinas, C. Kennel).

Between the Augustan period and the time of Nero, the main coinage of bronze in Crete was produced by the *Colonia Iulia Nobilis Cnossos* (*RPC* I: 228–229). Its coinage consists of a series of issues signed by *duoviri* (*RPC* I: 234–236). Another Cretan mint, Kydonia, also issued a bronze coinage under Augustus. The denominations of the Roman monetary system, such as the as the semis and the quadrans, were adopted by the Cretan cities. Then, from the time of Tiberius, nine Cretan mints (**Figure 5.1**) — Kydonia, Polyrrhenia, Lappa, Eleutherna, Axos, Gortyn, Lyttos, Lato, and Hierapytna — issued silver and bronze coins, organised on a federal basis (*RPC* I: 10, 15, 21) and signed by Roman governors. This Cretan silver coinage, 'perhaps manipulated by the Romans as a provincial coinage' (*RPC* I: 14), was issued in three denominations (tetradrachms, tridrachms and drachms) and follows a local standard. It was overvalued in relation to the denarius and minted for local requirements and circulation (*RPC* I: 230–231), as also the bronze issues, which would have included for the cities the prestige and profit arising from the provision of small change (*RPC* I: 16–17). Apart from the colonial issues of Knossos, which continued until Nero, and also Kydonia and Lappa, which, freed by Augustus for services rendered in the civil wars, continued to issue coins over a longer period (Baldwin Bowsky 2007: 198), the issues of other cities ceased after Caligula, when bronze coinage in the name of the Cretan *Koinon* was first struck under Claudius (Price 1982–1983: 122–123).

The function of personal names

From the 5th until the 1st century BC, coins of Greek city-states often carried on the obverse and/or the reverse one or more personal names, which were inscribed in different ways (as monograms, in an abbreviated or complete form, written mainly in the nominative, but also in genitive case) and are followed in some cases by their patronymics written in genitive or as monograms.

The varied references to these individuals, exclusively engaged or not in producing coins, create difficulties in the interpretation of their function. Were they magistrates, mint officials, or prominent individuals appointed to produce coinage on an *ad hoc* basis? Were their names used to date the coins or to record responsibility for the minting process, including — or not — the cost for the issues?

In a few cases, these individuals represent the *archai* of the polis, 'eponymous' magistrates, whose names are accompanied by the preposition *epi*, political bodies (e.g., *archontes*, *eglogistai*, *exetastai*, *prostatai*, *prytaneis*, *tamiai*, *strategoi*, *grammateis*) or priestly functionaries (*RPC* I: 3), whose official title is written explicitly on silver or bronze coins, especially in late-Hellenistic and Imperial times. The function of all the other individual names, not followed by titles indicating their primary duty (Weiss 2005: 62), can be otherwise explained. Two hypotheses have been put forward: either that of the monetary responsible for an issue (mint official

criteria, could be dated during this period, see Baldwin Bowsky 2007: 198, citing a view of K. Sidiropoulos. However, on a Ptolemaic influence for the minting of this issue during the 3rd century BC; see Stefanakis 2019: 69. For the large and heavy bronzes of the neighboring Anopolis issued probably at the aforementioned period, see Carrier and Stefanaki 2017: 471.

or officer, *monétaire* in French) designated *ad hoc* by the city or occupying a specific magistracy, like the *III viri monetales* at Rome; or that of private benefactors (*liturges* or *euergetai*) who volunteered to pay for a specific issue (i.e., supply the metal and assume the costs of the production) (Ingvaldsen 2002: 205–206, with references).

P. Gauthier considers that it may seem excessive to establish a distinction too rigid between magistrates and *liturges* (Gauthier 1975: 175–178; also *RPC* I: 3), since a magistrate (ἄρχων) puts not only his person at the service of the city, but also his relations and sometimes his fortune, and a liturge is invested with responsibilities which make him, for a certain time, the equivalent of a magistrate. However, the theory of a liturgy (Habicht 1991; 1995: 243–246; Helly 1987: 45–46; Jones 1979: 81–90; Kroll 1964: 94–99; Thompson 1961: 593–599) and also the tenure of a magistracy by the mint officials, which imply an annual office, have been rejected by L. Robert (1973) and many other scholars.

In the case of the Hellenistic royal coinages, F. de Callataÿ (2012: 58) argues that the individuals who signed the coins 'were not strictly speaking, magistrates, but commissioners *ad hoc*,[9] often appointed in a college of two or three, with tenures whose lengths may have varied'. It should be noted that monetary colleges are probably attested in the cases of Rhodes and Kos (Stefanaki 2012: 106), as well as for the *Koina*, both Aetolian and Epirotan.[10] In the case of the drachms of Dyrrachium, issued between 270 and 60/55 BC, A. Meta (2012, 2015: 206) formulated an hypothesis according to which the name of the individual appearing on the obverse, designates the 'monetary commissioner' appointed by the city to be in charge of the issue, while the one on the reverse designates the mint master (*argyrokopos*), responsible for the technical work of the minting.

During imperial times, apart from the names of individuals, names and titles of the provincial governor, the emperor himself and the ruling body of the city, who granted the authorisation for minting, occur on civic coinages (*RPC* I: 2–3). Moreover, on the civic coins of the cities, especially in the province of Asia between the Flavian and the Severan eras, occasional formulae (αἰτησαμένου, ψηφισαμένου, εἰσανγείλαντος, ἐπιμεληθέντος and ἀνέθηκεν) and honorific titles (e.g., εὐεργέτης, σωτήρα, ὑιός πόλεως φιλόπατρις) attest responsibility, initiative, euergetism and donation (Harl 1987: 26–30; Howgego 2005: 7; Weiss 2005: 61), and, according to K. Harl (1987: 26), 'should be seen as casting further light on the constitutional procedures of Greek cities and political beliefs of Greek notables that are known from the epigraphic record'. However, as P. Weiss points out (2005: 63), even though the initiatives of euergetism achieved a certain frequency, there is absolutely no evidence for them in the coinage of most of the cities, and the monetary responsibility was mainly attached to particular officials, usually elected and paid by the city.

Therefore, it seems that the monetary practices, as concerns the role played by the magistrates, the people in charge of the monetary production and the *liturges, euergetai*, or private donors varied from one city to another and from one period to another, and, according to A. Bresson (Bresson 2001: 197–198; *RPC* I: 3; also Weiss 2005: 61), these different cases are not exclusive of each other and that, depending on the circumstances and the periods, they were all used.

The case of Crete

The use of personal names, written in full, mainly in the nominative case, or in abbreviated form, or as initials and monograms, occurs on Cretan coins from the second quarter of the 4th century until the imperial period (**Table 5.1**).[11] However, this practice of inscribing names of magistrates or mint officials responsible for the monetary series, was not quite common on the silver and bronze coinage of the Cretan cities and not frequent on each separate issue of the mints. Nevertheless, from the late-Hellenistic period, the appearance of names with their patronymics and also of letters for the administrative control became more frequent and indicates a change in the minting organisation and administration of the Cretan city-states.

Therefore, the issues on which the appearance of names of local officials is more regular date between the end of the 2nd century BC and the 2nd century AD; these concern the civic and pseudo-Athenian silver and bronze issues of Hierapytna minted before the Roman conquest, the civic bronze issues of Knossos minted between the 40s and 30s, and the bronze issues of Kydonia minted during the reigns of Claudius, Domitian, and Trajan. On these coinages the names are more frequently written in full, a fact which offers the possibility to search on their social origin in the literary and epigraphic sources.

[9] Note that in Delos, in 169 BC, the inventory of jars mentions a deposit made in the sacred case by commissioners 'elected to deal with the minting of money': [ἄν]δρες ο[ἱ] αἱρεθέντες ἐπὶ τὴν κοπὴν τοῦ νομίσματος (see Chankowski 2011: 388).

[10] On the case of the coins of the Aetolian *Koinon*, see Tsangari 2007: 191–192, and of the Epirotan *Koinon*, see Picard and Gjongecaj 2001: 236–237. For monetary boards in the coinage of the Imperial period, see *RPC* I: 2–3.

[11] On the personal names inscribed on the Cretan coinage, see Münsterberg 1973: 124–126; Pałuchowski 2005: 36–37, n. 138. We should mention that names of deities and mythological figures as well as names of engravers appear on the Cretan coinage from the 4th century BC.

In Crete, the most important institution was the college of κόσμοι or κοσμητῆρες,[12] attested in the island from the 7th–6th centuries until the imperial period. They were elected by certain parts (στάρτοι or στράτοι) of the civic body, which correspond to the different tribes or especially to the military units of these last ones or to the particular *gene* (γένη) of each city. Even though their number varies in the Cretan inscriptions, Aristotle writes that the *kosmoi* were ten (*Politics* 1272a, l.4–7). At the head of the college was the *protokosmos*, attested only twice in the inscriptions of the Hellenistic period (Pałuchowski 2005: 13 n. 4; Sherk 1990: 278; Youni 2011: 118). The term of their office probably lasted one year (Gagarin and Perlman 2016: 72–73.), with the prohibition of re-election for a specific period — a measure against political instability and tyranny — according to the principle or system of rotation that characterised this Cretan institution, in force from the Archaic period at Gortyn and Dreros, as we are informed from inscriptions (Gagarin and Perlman 2016: no. G14 and Dr1), or with possibility of successive re-election in certain Cretan cities, especially from the Hellenistic period (*IC* I.xvi.3–4, Lato). The Cretan magistrates, the *protokosmoi* and the *kosmoi*, did not disappear as an institution in the imperial era. There were four of them, and their term probably lasted one year with the possibility of re-election. Their functions were limited to the management of the public, religious, and judicial life of the Cretan cities (Tzamtzis 2013: 246–49). However, in the context of the new politico-economic and social situation that was accelerating the process of transformation of local Cretan societies in the imperial era, the system of the annual succession of tribes to the magistracy of *kosmoi* disappears; their college was gradually abolished in most Cretan cities, and the executive power became concentrated in the hands of the *protokosmos* (Pałuchowski 2005: 13–29).

The names which figure on the Cretan coins have been commonly interpreted as the *kosmoi* or the *protokosmoi* of the Cretan city-states. Nevertheless, as we shall see, it is not probably always the case.

Hierapytna

The rich *onomasticon* of the Hierapytnian mint officials has been treated and commented by O. Masson (1979: 74–82), F. Guizzi (2001: 337–339) and the author of the present paper (Stefanaki 2021: 293, 306–309, 326–328, 338).

Fourteen names (**Table 5.1**) are inscribed on the reverse of the civic silver issues (tetradrachms, didrachms and drachms) minted between 80s and 70s, with the turreted head of Tyche on the obverse and the palm tree and the eagle on the reverse. The names are mainly written in full and appear to be in the nominative case. They are sometimes accompanied by their patronymic, written in full and in genitive, or in the form of a monogram.[13] Mint officials bearing the same name appear in this series, such as Μενεσθένης 1 (without monogram) (**Figure 5.2**) and Μενεσθένης 2 (with patronymic in the form of a monogram) (**Figure 5.3**), as well as Σαμαγόρας 1 and 2 (**Figures 5.4**, **5.5, 5.6, 5.7**). This last issue of Σαμαγόρας 2 presents, behind Tyche's head, the letter B (**Figures 5.6, 5.7**), which probably served to distinguish Σαμαγόρας 1 from Σαμαγόρας 2. Here again are two monetary officials of the same name, as for Μενεσθένης 1 and 2, since the monogram Μ appears on the first issue (**Figure 5.4**), while the monogram ΜΟΒ is on the second (**Figure 5.6**). Thus, the letter B, which appears on the obverse of the didrachms and drachms of Σαμαγόρας 2 (**Figures 5.6**, **5.7**), is also integrated into the monogram on the didrachms (**Figure 5.6**). We can therefore assume that these two mint officials, besides having the same name, also had the same patronymic, or that Σαμαγόρας 2 had a family link with Σαμαγόρας 1. The letter B distinguishes the two issues and determines their chronological order, with the issue of Σαμαγόρας 1 preceding that of Σαμαγόρας 2. This conclusion is confirmed by the very clear iconographic and stylistic differences between the two issues, both of which are included in the Hierapytna hoard, 1933/4 (*IGCH* 352).

G. Le Rider thinks that the differences of style between the various issues of Hierapytna indicate that this coinage lasted several years and that the charge of the mint official should not be limited only to a few months. On the other hand, the coins form a fairly homogeneous group so that we do not need to spread them over several decades or assume that each mint official has exercised its functions years later, or that important interruptions occurred in the mint (Le Rider 1968: 328, n. 27). He therefore concludes that the personal names appearing on these issues followed one another at an annual rate.

We believe that G. Le Rider is correct in thinking that there is no significant interruption in this coinage of Hierapytna. Thus, the variety of styles attested on these coins is not an indication of a prolonged strike (De Callataÿ 2004: 145). However, on the other hand, the use of the same obverse die by six different mint

[12] It should be mentioned that, apart from the title of the *kosmoi*, other titles appear to have been used in reference to the 'eponymous' magistrates in the Hellenistic period, such as *damiorgoi* to Olonte, Polyrrhenia, Aptera and Kydonia (see Sherk 1990: 268–269, and Vagionakis 2017) and *archontes* to Itanos and Praisos; see Capdeville 1997: 275, n. 10; Chaniotis in *SEG* 60.984; Perlman 1992: 195.

[13] The interpretation of the monograms figured on the Hierapytnian coins, as patronymics, results from the coins of the mint official Νέων Καυσίλω (see Svoronos 1890: nos 13–14, pl. XVII), whose patronymic is written in a complete form on the tetradrachms, while on the fractions (didrachms and drachms) appears in the form of a monogram ϒ, which can be analysed as ΚΑΥ.

Figure 5.2. Hierapytna, Didrachm, London, BM, Taylor Combe Catalogue (TC), p147.1. Hie (Coll. Clayton Mordaunt Cracherode), Hierapytna 5 (BMC Crete etc.: 48, no. 5; Svoronos 1890: 191, no. 23; Stefanaki 2021: 237, no. 233, pl. VII) (© The Trustees of the British Museum).

Figure 5.3. Hierapytna, Didrachm, Menesthenes 2. CNG, Mail Bid Sale 73, 13 September 2006, no. 282 (Stefanaki 2021: 245, no. 309, pl. X).

Figure 5.4. Hierapytna, Didrachm, Samagoras 1. Heritage Auctions Inc., 2013 September World and Ancient Coins Signature Auction, 25 September 2013, no. 23154 (Stefanaki 2021: 233, no. 194, pl. VI).

Figure 5.5. Hierapytna, Drachm, Samagoras 1. Athens, Numismatic Museum, Collection D. Artemis, BE 913/2004, n° 410 (Andreou *et al.* 2018: 212, fig. 15; Stefanaki 2021: 233, no. 197, pl. VI).

Figure 5.6. Hierapytna, Didrachm, Samagoras 2. Paris, BN, 2437 (*SNG Delepierre*: no. 2397, pl. 64; Stefanaki 2021: 242, no. 276, pl. IX).

Figure 5.7. Hierapytna, Drachm, Samagoras 2. Private Collection (Stefanaki 2021: 242, no. 277, pl. IX).

officials for the minting of the Hierapytnian didrachms (Stefanaki 2021: 295) confirms that there was no annual monetary magistracy (also De Callataÿ 2015: 255–256).

Besides the name of Φαῦος, which appears only on the Hierapytnian coins, and those of Λεῦσος, Κλουμενίδας, Κύδας or Κύδαντος,[14] and ῞Αργανος, mentioned as Cretans in literary sources and in inscriptions on the island and elsewhere, all the other names of mint officials, such as Σαμαγόρας, ᾽Αρισταγόρας, Πάνσων, ῾Ιμεραῖος, Μενεσθένης, Νέων, Καυσίλος, Λίβυς, and ῞Ασβαντος, are attested in the inscriptions of Hierapytna. The names of ῾Ιμεραῖος, Καυσίλος, and ῞Ασβαντος are attested only at Hierapytna, while Σαμαγόρας, ᾽Αρισταγόρας, Πάνσων, Μενεσθένης, and Νέων are fairly well known and quite common in Crete (references in Stefanaki 2021: 306–309).

We have only five cases that indicate the social identity of these names of mint officials in the city of Hierapytna: Καυσίλος, Σαμαγόρας, Μενεσθένης, ᾽Αρισταγόρας, and ῾Ιμεραῖος, who seem to represent the upper social classes. The first three names are mentioned as *kosmoi* in the *isopoliteia* treaty between Itanos and Hierapytna of the end of the 3rd century BC (*IC* III.iv.6, Itanos; *StaatsV*. III.579; Chaniotis 1996: no. 20, ll. 10–11; also Petropoulou 1985: 170, table 6, nos 1–2, 4). Σαμαγόρας is also mentioned as a *kosmos* in the treaty of alliance between Hierapytna and Seleukos II (Apostolakou 2006) and as a *bouleutes* in an inscription of 1st century AD or AD 125 concerning the establishment of a *sodalitas* (association or fraternity with social, religious or intellectual character) by a council of local notables, Boule or gerousia (*IC* III.iii.7, Hierapytna; *SEG* XXXII.872; also Pałuchowski 2008:

[14] According to O. Masson (1979: 75), the name Κύδαντο inscribed ovn the Hierapytnian didrachms is the abbreviated genitive (Κύδαντος) of Κύδας, a very common name in Crete and especially in Gortyn and Knossos (see below). On the Hierapytnian coins, the names of mint officials are always written in nominative, and the patronymics, written in the Dorian genitive, have an ending in -ω. Thus, in our opinion, the name of the mint official Κύδαντο is probably written in nominative, Κύδαντο(ς). See also the cases of ΕΥΦΑΜΟ and ΠΑΝΧΑΡΗ figured on the Itanian and Lyttian staters minted between the second half of the 4th to beginning of the 3rd century BC (**Table 5.1**). However, in the case of the Samian tetradrachms of the mid-4th century BC, the two endings of genitive, in -ο and in -ω, appear (Barron 1966: 111, 115, 209; Meadows 2010).

305–306). The name of ᾽Αρισταγόρας is also probably mentioned in the aforementioned inscription of the imperial period (Pałuchowski 2005: 75–76, 2008: 161). ᾽Αρισταγόρας appears also as a *protokosmos* in an Hierapytnian inscription of the 2nd–3rd century AD (Davaras 1980: 19–21, no. 22), probably as a *kosmos* — the son of Εὐρυκάρτης — in an inscription of the second half of the 2nd century concerning the restoration of the temple of Zeus Diktaios and its statues by the Hierapytnians (*IC* III.ii.1, *Dictaeum Fanum*), and also as a father of the officer Εὐρυκάρτης in the garrison left by Attallus I in 208 BC in the Phocidian town of Lilaia.[15] Finally Ἰμεραῖος is attested as a father of a *kosmos* in two Hierapytnian inscriptions of the 2nd century BC concerning building or rebuilding programs of temples and statues (*IC* III.iii.9 l. 15, Hierapytna; *IC* III.v.1 l. 4, Oleros; also Petropoulou 1985: 171, table 6, nos 22, 24).

The pseudo-Athenian tetradrachms of Hierapytna were struck by five mint officials, Ζηνόφιλος, Κύραννις, Σωτά-Εὐχρήστας, and Βείδυλος, whose names, except that of Κύραννις, are attested in the inscriptions of Hierapytna.[16] These were probably Hierapytnian mint officials, but their relationship with the Cretan *Koinon*, which is considered as responsible for these issues, is not known, given the insufficiency of our documentation.

The names of Εὐχρήστας (*IC* III.iii.37, Hierapytna, end of the 1st century BC) and Βείδυλος (*IC* III.iv.10 l. 2, Itanos; also Petropoulou 1985: 171, table 6, no. 38) are attested only at Hierapytna. The issue of Εὐχρήστας is characterised by the presence of a second name of monetary official, that of ΣΩΤΑ (**Figure 5.8**). His abbreviated name, probably Σωτᾶς or Σωτάδας in the nominative,[17] which appears on the obverse of the tetradrachms in question,[18] is probably accompanied by his patronymic, written in the form of a monogram ⍙.[19] It is the same monogram as that figured on the didrachms of civic types of Ἄσβαντος (**Figure 5.9**).

Only the case of the Zenophilos name (**Figure 5.10**) could be significant for our issue of mint officials'

Figure 5.8. Hierapytna, Pseudo-Athenian Tetradrachm, Sota-Euchrestas. New York, American Numismatic Society, 1957.174.1 (Stefanaki 2021: 247, no. 322, pl. XI).

Figure 5.9. Hierapytna, Didrachm, Asbantos, Berlin, Münzkabinett, Imhoof-Blumer, 1900 (Stefanaki 2021: 243, no. 283, pl. IX).

social identity, since he could be an ancestor, but also the father of Archedika, daughter of Zenophilos, who, between the 1st century BC and the 1st century AD, rebuilt at her own expenses part of the temple of Demeter and Kore in the city of Hierapytna (*IC* III. iii.12, Hierapytna; Guizzi 2001: 338). Claudius, son of Zenophilos, was also honoured by the city in the 1st century AD with an important monument (*IC* III. iii.22, Hierapytna; Pałuchowski 2008: 234.). We should mention that the name ᾽Εξακέστας, which figures on the pseudo-Athenian tetradrachms of Priansos (**Table 5.1**) also refers regularly to the representatives of the ruling class, as evidenced in inscriptions of Knossos, Arkades, and Gortyn of the Hellenistic and Roman periods (Pałuchowski 2003: 324–325, 339–340).

The Hierapytnian bronze coins minted between the end of the 2nd century and 67 BC carry names of mint officials as well (**Table 5.1**). Nevertheless, their abbreviated form does not allow their identity to be read with certainty. However, the name of ΦΑΛΑ, probably Φάλαρος, inscribed on the bronze coins with the star and the palm tree (**Figure 5.11**), issued probably in the end of the 2nd century BC, is attested on the genealogical stele of the Eteanorides (end of 2nd–1st century BC), a prominent Hierapytnian family, whose distant ancestor ᾽Ετεάνωρ Μελανθύρω participated in the foundation of the city (*IC* III. iii.8, Hierapytna; Chaniotis 1987: 41–42; Chevrollier 2015: 226–227; Guizzi 2001: 302–303; Pałuchowski 2008: 221).

[15] For references, see Guizzi 2001: 329; Petropoulou 1985: 171, table 6, no. 41.

[16] On Ζηνόφιλος, see *IC* III.iii.12 and 22, Hierapytna.

[17] The name Σωτάδας is found in the inscription of Hierapytna of the 1st century AD or AD 125 (*IC* III.iii.7, Hierapytna). The name is also found in other Cretan cities with the status of a *protokosmos*, *kosmos*, *damiorgos* and *proxenos* (see Pałuchowski 2008: 318).

[18] Let us note that the more frequent presence of names on the obverse of the Greek coins issued in the 1st century BC, as in the case of the civic tetradrachms of Knossos (ΝΙΚΑ and ΠΟΛΧΟΣ) and Kydonia (ΠΑΣΙΩΝ), as well as the pseudo-Athenian tetradrachms of Kydonia (ΑΙΘΩΝ) testifies, according to A. Meadows (2002: 110), to 'the creeping Romanization of coin design'. See also De Callataÿ 2011: 65–66.

[19] Full or abbreviated patronymics also appear on the reverse of the pseudo-Athenian tetradrachms of Priansos in the name of ᾽Εξακέστας Σωδάμω or Πυργίας Κλ and Gortyn, in the name of Μεν ᾽Αντι (**Table 5.1**).

Figure 5.10. Hierapytna, Pseudo-Athenian Tetradrachm, Zenophilos. *Coll. Traeger*, no. 134 (Stefanaki 2021: 246, no. 317, pl. XI).

Figure 5.11. Hierapytna, Bronze coin, Fala. *Coll. Traeger*, no. 125 (Stefanaki 2021: 229, no. 163, pl. IV).

Figure 5.12. Hierapytna, Bronze coin, Sote. Athens, Numismatic Museum, 204 (Stefanaki 2021: 248, no. 342, pl. XII).

Moreover, the abbreviated name of ΣΩΤΕ, probably Σωτέλης, figured on the last bronze Hierapytnian issues with male heads on the obverse and the palm tree and the acrostolion on the reverse (**Figure 5.12**), minted between 80s and 70s, is attested as the father of a *kosmos* in an Hierapytnian inscription of the 2nd century BC concerning the building of a temple dedicated to Apollo *Dekatophoros*, the Twelve Gods, and Athena *Polias* in the city of Hierapytna (*IC* III.iii.9, Hierapytna:Αγησίμαχω τω Σωτέλεος; also Petropoulou 1985: 170, table 6, no. 14). This series includes also the abbreviated name of MENE, probably Μενεσθένης, who signed the Hierapytnian didrachms of civic types; he is also known as an Hierapytnian *kosmos* in the epigraphical sources (*IC* III.iv.6, Itanos).

Worth noting is also the presence of ten of the names of the Hierapytnian mint officials, precisely Πάνσων, Ἰμεραῖος, Φάλαρος, Εὐχρήστας, Βείδυλος, Ἀρισταγόρας, Ἄσβαντος, Λίβυς, Καυσίλος, and Νέων, in an obituary of local officials (*preigistoi* and *oroi*) with military and/or administrative duties[20] found in the border area of Vasiliki, which dates between the end of the 2nd century and the first third of the 1st century BC (Van Effenterre 1989: 101).

Besides the fact that the majority of the Cretan inscriptions of the Hellenistic period are public legal documents (Chaniotis 2015: 75), the above observations may indicate — supposing also the social colouration of names (Pałuchowski 2008) — that the important political, administrative, and military offices in Hierapytna were the exclusive privilege of some influential and wealthy families, whose members formed an elite class in the Hellenistic and Roman periods.

Knossos

The Knossian bronze coins with the head of Zeus or Artemis on the obverse and the eagle with open wings or quiver on the reverse, issued probably between 40s and 30s BC, have been studied by A. Chapman (**Table 5.1**; **Figures 5.13**, **5.14**). Six names of mint officials appear on this coinage minted in two denominations.[21] They are written in full and in the nominative case, and only the name of Μνε(η)σίθεος appears in the form of a monogram. However, even though the article by A. Chapman does not include a die study of this coinage, she mentions the use of the same pair of dies between Κύδας and Σαυρομάτας (Chapman 1968: 23; *RPC* I: 223–224)[22] and also the appearance of sequence letters, probably for the die-control of the issues (*RPC* I: 223–224). Die-control letters are also used in the coinage of L. Lollius, minted in the 40s (*RPC* I: 218–219). These Knossian issues therefore form an homogenous group minted in a short period of time, and the individuals who signed them were not magistrates holding an annual term of office, but probably mint officials assigned *ad hoc*, responsible for the coinage and belonging probably to the upper classes of the city.

The name of Ταυριάδας is mentioned as a *protokosmos* in an inscription found in the sanctuary of Zeus Thenatas at Amnisos, one of the ports of Knossos (Davaras and Masson 1983: 391, 396). The names of Θαρσύδικας, Σαυρομάτας and Μνε(η)σίθεος are not attested in the Cretan epigraphical record, while those of Αριστίων and Κύδας are very common Cretan names. The name

[20] For the references on *preigistoi* and *oroi* or *orophylakai* in Crete, see Stefanaki 2021: 73–75 and Coutsinas and Stefanaki forthcoming.

[21] The coins with the name [...]ΜΕΝΙΣ attributed either to the Knossian (*RPC* I: no. 937) or the Lyttian mint (Metenidis 2000: 694; Sidiropoulos 2004: 200, n. 28) belong to Myndos in Karia; for references, see Stefanaki 2012: 330, nos K472–K473.

[22] However, the only surviving specimen of the issue of Sauromatas is probably a forgery; see Carrier 2018.

Figure 5.13. Knossos, Bronze coin, Kydas. Bibliothèque nationale de France, département Monnaies, médailles et antiques, Fonds général 145 (© Gallica, BnF).

Figure 5.14. Knossos, Bronze coin, Tauriadas. Bibliothèque nationale de France, département Monnaies, médailles et antiques, Fonds général 154 (© Gallica, BnF).

of Κύδας is extremely common, particularly in Gortyn from the Hellenistic period (Chaniotis 2000: 57–58). However, several people bearing this name and related to Knossos are known for the late-2nd–1st century BC: Kydas, son of Kydas, named as *protokosmos*, on the treaty of alliance between Lato and Olous under the arbitration of Knossos (*IC* I.xvi.3 l. 2, Lato); and Kydas, father of the *kosmos* or *protokosmos* Eurymachos, in an inscription of Amnisos (Davaras and Masson 1983: 400).

Nevertheless, the most famous Kydas in Cretan history is the Cretarch Kydas of Gortyn. According to Cicero (*Philippics* 5.5.13), Kydas was a close friend of Antony and he is also known from a Gortynian inscription (*IC* IV.250, Gortyna) as *Kretarchas* and *Archos* (Rouanet-Liesenfelt 1984: 350–352; Tzamtzis 2013: 262–267). During his government, placed in the period between 43/42 and 31 BC, he minted a provincial issue of cistophoric tetradrachms which carries his name and title (ΚΥΔΑΣ ΚΡΗΤΑΡΧΑΣ)[23] and the name of the issuing authority (ΚΡΗΤΑΙΕΩΝ) (**Figure 5.15**) (Perl 1970: 346–349; Price 1982–1983: 120–121; Rouanet-Liesenfelt 1984; *RPC* I: 222; Sanders 1982: 5–6; Tsougarakis 1987: 294). However, the Cretarch Kydas and the Knossian mint official are two different persons (Carrier 2018; also Chapman 1968: 21–23).

[23] The Cretarch's office was created by Antoine, who entrusted to the Gortynian Kydas the government of the island or at least of only one part of it, which was united in a confederation quite different from that of the Hellenistic period.

Figure 5.15. Gortyne, Cistophoric tetradrachm. Bibliothèque nationale de France, Département monnaies, médailles et antiques, E 3141 (© Gallica, BnF)
(Svoronos 1890: 334, no. 1; RPC I: no. 926).

Besides the uncertain attribution of the cistophoric tetradrachms of Q. Lepidus to the Knossian mint, worth noting is the occurrence of two names, Kleumenidas and Eurymachos, figured on this issue, in the high social milieu of Central Crete in the late-Hellenistic and Roman periods (Tansey 2008: 185, n. 43, 188–189, n. 62; Paluchowski 2003: 331; Davaras and Masson 1983: 400).

Kydonia

Like the city of Lappa, Kydonia continued the minting of a bronze coinage until the Antonine period, and, from the time of Claudius, its coinage, contrary to the issues of Lappa (Baldwin Bowsky 2007: 198) and those of the Cretan *Koinon*, carried local personal names introduced in most cases by the preposition ΕΠΙ and sometimes accompanied by their patronymic (**Table 5.1**; **Figures 5.16**, **5.17**). We should mention that the preposition ΕΠΙ also precedes the names of the proconsuls, written in the genitive and inscribed as a dating formula on the provincial issues of the Cretan cities under Tiberius and Caligula (Cornelius Lupus, Laches and Augurinus), and also on those of the *Koinon* under Vespasian (Silo) (*RPC* I: 229–230; *RPC* II: 49–50, nos 1–9). However, the coinage of Kydonia in question constitutes the only case in Cretan civic coinage where eponymous officials of the city place their name on coins, preceded by the preposition ΕΠΙ (during the year of service/magistracy of) and given in genitive case, probably for dating purposes and/or as marks of control. Five[24] personal names appear on the bronze coinage of Kydonia minted in the 1st and the beginning of the 2nd centuries AD: one under the reign of Claudius (AD 41–54), three under Domitian (AD 81–96), and one under Trajan (AD 98–117) (**Table 5.1**). Although the rhythm of the production of this coinage, mainly for the period of Domitian, is unknown, given the absence of a die-study, the officials represented might be the *protokosmoi* mentioned in the eponymic formulas of the

[24] This study does not take into account an unidentified name inscribed on a coin of these issues minted under Domitian (Svoronos 1890: 118, no. 146; Pałuchowski 2005: 80–81).

Figure 5.16. Kydonia, Bronze coin, Domitian. Neokydes Tharsa. Bibliothèque nationale de France, département Monnaies, médailles et antiques, AA.GR.13133 (© Gallica, BnF).

Figure 5.17. Kydonia, Bronze coin, Trajan, Alexandros Aristarchou. Bibliothèque nationale de France, département Monnaies, médailles et antiques, Fonds général 247 (© Gallica, BnF).

law decrees and honorary inscriptions (Pałuchowski 2005: 30–36).

However, none of them is attested as a *protokosmos* or *kosmos* in the inscriptions of Kydonia. The name of Ἀλέξανδρος is common in Crete (Pałuchowski 2003: 318), and the names of Ἀρίσταρχος and Θαρσα(γόρας) are found mainly in occidental Crete (*LGPN* I: *s.v.* Ἀλέξανδρος, Ἀρίσταρχος and Θαρσαγόρας). Moreover, even though the names of Ἐτέαρχος, Ἀγάθων, Ἀλέξανδρος, and Νεοκύδης are attested in other Cretan cities, as *protokosmoi*, *kosmoi* and *proxenoi* (Pałuchowski 2008: 131, 139, 222, 283), only the name of Νεοκύδης, son of Ξένωνος, is mentioned in an honorary monument erected by the city of Kydonia in the end of the 1st century BC–beginning of the 1st century AD (Pałuchowski 2005: 81; Van Effenterre *et al.* 1983).

The name of Ἕλβιος is also not otherwise attested in Crete. According to A. Pałuchowski (2005: 79), Ἕλβιος/ Helvius, a purely Italian *nomen gentilicium*,[25] must be added to the list of the highest municipal magistrates of Kydonia. The local upper class, composed of indigenous and foreign elements, has in its ranks several notables of Roman origin or, at least, members of Romanised families, bearing Roman names.[26]

Besides this name, all the other names inscribed on the Kydonian issues are traditional Greek personal names with a Greek-style patronymic. However, we have to notice that the local epigraphic record shows the elevated number of Roman names that appear in the city already from the beginning of the empire (Pałuchowski 2003: 140 n. 776, 2005: 79–80, n. 421), in comparison to the Greek ones. According to M. Baldwin Bowsky, Kydonia, as Knossos, attest to 'a mixture of progressivism and conservatism' (Baldwin Bowsky 1995: 54).

Conclusion

From the above study, it follows that the practice of naming individuals on civic coinage was not regular in the island of Crete. The abbreviated names, as well as initials and monograms, are more numerous (**Table 5.1**), in comparison with full names, which appear mainly in the nominative case. Eponyms, titles of officials, and honorific titles rarely appear on the Cretan coins before the Imperial times. We have only the case of the Cretarch Kydas on the silver coinage of Gortyn, minted probably in the 40s or 30s.

It seems, therefore, that in the case of Crete in Hellenistic and late-Republican periods, which is probably similar to that of Athens, where inscriptions attest to the high social origin of mint officials (Habicht 1991, 1995: 243–246), and different from that of Rhodes, where the *onomasticon* offers examples of a recruitment among a broader social milieu (Apostolou 2016: 132–135; Bresson 2001), the mint officials — who were probably not *protokosmoi* or *kosmoi* (of a mostly annual mandate), as A. Pałuchowski argues (2005: 38–39)[27] — were from the ruling class, probably among the most honorable and politically active families in the city, as the epigraphic sources attest; some of these had close family ties.

These mint officials, whether or not they held a magistracy as primary or secondary duty, which was not annual, were probably responsible for the organisation and administration of the minting of the city during a given period, in charge of all the operation of the striking, for which they probably did not assume the expenses. Thus, it does not seem that the presence

[25] The name of Helvius is attested in the case of P. Helvius Pertinax, who was the husband of Flavia Titiana, daughter of T. Flavius (Claudius) Sulpicianus, who belonged to the well-known family of Flavii of Hierapytna. Their children were P. Helvius Pertinax the younger and Helvia (see Baldwin Bowsky 1995: 51, 59).

[26] On the Roman names in the Greek speaking provinces of the Empire, see Rizakis 1996, with relevant bibliography. On the appearance of Greek personal names on the colonial issues of Knossos, see Baldwin Bowsky 2004: 135; Tzamtzis 2013: 235.

[27] The inscription ΚΟΣ on the drachms of Lappa (**Table 5.1**) has been interpreted as an abbreviation of the title of the *kosmos* (Pałuchowski 2005: 38–39). However, ΚΟΣ is probably the abbreviated name of the mint official accompanied by his patronymic ΣΥΛΩ (see *LGPN* I s.v. Σῦλος and Tzamtzis 2013: 201). For the Cretan names beginning with ΚΟΣ, see *LGPN* I: 270.

of names on the coins has any other function than to facilitate the administrative control of the monetary production.

Besides the probable opening of Cretan society during the late-Hellenistic period, it seems, from the names of the mint officials inscribed on Cretan coins, that the political offices were probably always reserved for the same upper 'aristocratic' classes known from Hellenistic inscriptions. This could be deduced mainly from the names on the Hierapytnian coinage of the first third of the 1st century BC, which offers the richest *onomasticon* of this period, and attest to the monopolisation of the magistracies and offices by the members of the most powerful families of the city and thus the survival of the 'aristocratic' character of the ruling class in the late-Hellenistic period.[28] The same is true for the provincial cistophoric issue of the Cretarch Kydas and probably for the civic coins of Knossos issued between the 40s and 30s.

The numismatic data confirms the prosopographic studies produced by M. W. Baldwin Bowsky for Lato (Baldwin Bowsky 1989), by A. Chaniotis (1992) on a series of inscriptions of Amnisos of the first quarter of the 1st century BC, and by F. Guizzi on Hierapytna (2001: 338–339). According to them, the political power and the magistracies in these 'aristocratic' Cretan societies were the exclusive privilege of certain families and there probably existed an elite, formed by powerful *gene*, which was responsible for the election of its own members in the college of *kosmoi* (*contra:* Brulé 1986: 457–458; Petropoulou 1985: 105). In Lato, in the 2nd century BC, it was necessary to prove the descent for four generations from one of the *gene* in order to reach the magistracy in question (Baldwin Bowsky 1989: 332).

The Cretan political system therefore retained its traditional and conservative 'aristocratic' character even during the 1st century BC. It seems that a mutation of the ruling class with the integration of other social classes into the ruling circle did not occur in Hellenistic times, given also the near absence of local private benefactors, *euergetai* or *choregoi*, as evidenced by the small number of decrees and honorary inscriptions found on the island; these were dedicated mainly to kings, Roman magistrates, and doctors. Therefore, we lack evidence for the display of private wealth in Hellenistic Crete. However, in the Roman period, we encounter honorary inscriptions and statues initiated by the cities (for the emperors, provincial governors, magistrates, members of the local elite, benefactors, and intellectuals), by both associations and individuals (Chaniotis 2004: 79–83, 2005: 95, 109, 2008: 91–92; also Coutsinas and Stefanaki forthcoming). The *euergesiai* of the local notables, recognised by their cities with the granting of honours, offices, and titles, are attested in most of the Greek cities throughout the High Empire (Rizakis 2015: 145–154; 2018: 278–281).

As we have already mentioned, some changes occur in the appearance of names on the coinage of Kydonia during the Roman period. The city uses the preposition *epi* followed by an individual name in the genitive on its civic coinage issued in the 1st to early 2nd centuries AD. These individuals, who appear as eponyms and so as dating formulae, probably concern the magistracy of the *protokosmoi*, responsible or not for the monetary production, without probably assuming the costs of the minting process. Although there is no evidence on the Cretan civic coinage of the Imperial period of double or triple names in the Roman style (*RPC* I: 3), the single Latin name of Ἅλβιος on these issues of Kydonia attests to a Roman influence (Mendoni and Zoumbaki 2008: 49–50) or presence within the local authorities. Besides this intrusion of indigenous (Romanised or not) or foreign (Romans and acculturated Hellenes) *homines novi* in Cretan society and the local elites (Baldwin Bowsky 2011: 432, 440), as well as the expansion of the economic activities of the local elites in other fields, such as trade, it seems that the ruling power also remained, probably in most of the cities during the High Empire, in the hands of a few, mainly indigenous, families of the Cretan upper classes who continued to control the local high magistracies and offices (Pałuchowski 2003: 407–411; Tsougarakis 1987: 306–307).[29] Some of these families were active in the public life of their cities in Hellenistic times (Pałuchowski 2003: 246, 614), as it has been also observed in the case of the prominent Peloponnesian (Zoumbaki 2008: 41–42, 49–50 with the relevant bibliography) and Cycladic stemmata (Le Quéré 2015: 229–234).

Thus, as I. E. Tzamtzis suggests (2013: 243–246, 456), following A. Chaniotis (1992) and A. Pałuchowski (2005: 422–423, 2006: 108), 'the limited democratisation of the political system of the Cretan cities during the Hellenistic period did not have an adverse effect on the attitude of their populations towards a ruling plutocracy, and thus, the frameworks of the functioning of civic life remained oligarchic in the imperial era, an attitude perfectly adapted to the Roman administrative model'.

[28] Let us note that P. Hamon (2007) argues that one cannot speak of an 'aristocracy' in the Greek cities of the Aegean world during the Hellenistic period, but rather of an 'aristocratisation' of the notables or the elites. As A. Chaniotis (2010: 11) notes: 'In the Hellenistic period the political power of a small number of families resembled the rule of an aristocracy - without however, reaching the level of institutionalized aristocratic rule. The transformation into a genuine hereditary aristocracy only occurred at the end of this period and characterizes the imperial period'.

[29] On the few Roman *nomina* and *cognomina* borne by holders of high public offices in Crete, especially in Gortyn, the provincial capital, as well as in Lyttos, see Pałuchowski 2005: 51–52, 82–83, and Baldwin Bowsky 2011.

Cretan Mints	Denomination	Date	Personal names	References
Aptera	Hemidrachm	3rd–2nd cent. BC	NI and KA	Svoronos 1890: 16, no. 15
Axos	Hemidrachm	80s–70s BC	KPA	Svoronos 1890: 40, no. 33
Chersonesos	Stater	280s–270s BC	ΔΑΜΩ[Ν]	Oeconomides-Caramessini 1981: 126, no. 58, Pl. V
Eleutherna	Stater	3rd cent. BC	ΩΤΕΑ	Stefanaki-Stratiki 2007–2008: 86–87
	Bronze	3rd–2nd cent. BC	Monograms	Svoronos 1890: 135–136
Elyros	Drachm	End of 4th–beginning of 3rd cent. BC	MI	Svoronos 1890: 142, nos 3–6
Gortyn	Stater	300–280/70 BC	ΑΡΙΣ	Le Rider 1966: 28, no. 156
	Bronze	Second half of 3rd cent. BC	Monograms	Jackson 1971: 43
	Tetradrachm, Drachm	80s–70s BC	ΘΙΒΟΣ	Svoronos 1890: 177, nos 156–157
	Drachm	80s–70s BC	ΠΑΡ	Stefanaki-Stefanakis 2013: 168, Série V, Groupe A
	Pseudo-athenian tetradrachm	86–83 BC	MEN ANTI	Svoronos 1890: 180, nos 183–184; Le Rider 1968: 320
	Cistophoric tetradrachm	43/42–31 BC	ΚΥΔΑΣ ΚΡΗΤΑΡΧΑΣ	Svoronos 1890: 334, no. 1; *RPC* I: no. 926
Hierapytna	Bronze	End of 2nd cent.–67 BC	ΦΑΛΑ	Svoronos 1890: 192, nos 33–34; Stefanaki 2021: 4ème Série
	Tetradrachm and fractions	80s–70s BC	ΛΕΥΣΟΣ ΦΑΥΟΣ ΣΑΜΑΓΟΡΑΣ 1 ΑΡΙΣΤΑΓΟΡΑΣ ΙΜΕΡΑΙΟΣ ΠΑΝΣΩΝ ΚΛΟΥΜΕΝΙΔΑΣ ΜΕΝΕΣΘΕΝΗΣ 1 ΚΥΔΑΣ or ΚΥΔΑΝΤΟΣ ΝΕΩΝ ΚΑΥΣΙΛΩ ΛΙΒΥΣ ΑΡΓΑΝΩ ΣΑΜΑΓΟΡΑΣ 2 ΑΣΒΑΝΤΟΣ ΜΕΝΕΣΘΕΝΗΣ 2	Svoronos 1890: 189–192; Stefanaki 2021: 5ème Série
	Pseudo-athenian tetradrachm	86–83 BC	ΖΗΝΟΦΙΛΟΣ ΚΥΡΑΝΝΙΣ ΣΩΤΑ / ΕΥΧΡΗΣΤΑΣ ΒΕΙΔΥΛΟΣ	Svoronos 1890: 193, nos 42–43; Le Rider 1968: 321–22; Stefanaki 2021: 6ème Série
	Bronze	80s–70s BC	ΣΩΤΕ ΛΕΥΚΤ ANTI MENE ΣΩΣΙ	Svoronos 1890: 192, nos 35–38; Stefanaki 2021: 7ème Série
Itanos	Stater	Second half of 4th cent. BC	ΕΥΦΑΜΟ	Svoronos 1890: 204, no. 23
	Bronze	3rd–2nd cent. BC	E	Svoronos 1890: 207, no. 43

Table 5.1. Personal names on Cretan coinage (4th cent. BC – 2nd cent. AD).

Cretan Mints	Denomination	Date	Personal names	References
Knossos	Stater	360/50–320 BC	ΠΑΝ	Le Rider 1966: 15–16, no. 1
	Stater	End of 4th–beginning of 3rd cent. BC	ΒΡΙΩΝ	Svoronos 1890: 73, nos 63–66
	Stater and fractions		ΑΡ	Svoronos 1890: 73, nos 67–70, 72–74
	Drachm		ΑΛΒ	Svoronos 1890: 74, no. 71
	Drachm, Hemidrachm		ΑΓΕΙ with different monograms	Svoronos 1890: 76–77, nos 88–91
	Tetradrachm	80s–70s BC	ΝΙΚΑ	Svoronos 1890: 88, nos 177–178
	Tetradrachm		ΠΟΛΧΟΣ	Svoronos 1890: 77, no. 96
	Bronze	40s–30s BC	ΜΝΕΣΙΘΕΟΣ, ΜΝΑΣΙΘΕΟΣ or ΜΝΗ and ΝΜΗ (an abbreviation in monogram of the name ΜΝΗΣΙΘΕΟΣ) ΘΑΡΣΥΔΙΚΑΣ ΤΑΥΡΙΑΔΑΣ ΚΥΔΑΣ ΣΑΥΡΟΜΑΤΑΣ ΑΡΙΣΤΙΩΝ	Svoronos 1890: 82–87, nos 133–170; Chapman 1968; *RPC* I: nos 929–937
Kydonia	Stater	End of 4th–beginning of 3rd cent. BC	Monogram (ΠΑ or ΑΓ) Monogram (ΧΑΡ, ΑΡΧ or ΜΑΡ)	Cameron and Hill 1913: 382, no. 4 Svoronos 1890: 100, no. 4
	Bronze	3rd–2nd cent. BC	ΕΥΠΟΛ	Svoronos 1890: 103, nos 33–34
	Tetradrachm	80s–70s BC	ΠΑΣΙΩΝ	Svoronos 1890: 107, no. 62
	Pseudo-athenian tetradrachm	86–83 BC	ΑΙΘΩΝ	Svoronos 1890: 109–110, nos 77–79; Le Rider 1968: 316–317
	Bronze	1st cent. AD–2nd cent. AD	ΕΠΙ ΕΤΕΑΡΧΟΥ (Claudius) ΕΠΙ ΝΕΟΚΥΔΟΥ ΘΑΡCΑ (Domitian) ΕΠΙ ΑΓΑΘΩΝΟC or ΑΓΑΘΩΝΟC (Domitian) ΕΠΙ ΕΛΒΙΟΥ (Domitian) ΕΠΙ ΑΛΕΞΑΝΔΡΟΥ ΑΡΙCΤΑΡΧΟΥ (Trajan)	Svoronos 1890: 114–118 *RPC* I: 241, no. 1018 *RPC* II: 53, nos 46–52 *RPC online*, nos 108–109
Lappa	Drachm	80s–70s BC	ΚΟΣ ΣΥΛΩ	Svoronos 1890: 213–214, nos 22–23
	Pseudo-athenian tetradrachm	86–83 BC	ΒΑ	Le Rider 1968: 317
Lisos	Gold coin (1,03 g)	3rd cent. BC	ΑΛΕΞΑΝΔΡΟΥ	Svoronos 1890: 223, no. 5
Lyttos	Stater	End of 4th–beginning of 3rd cent. BC	ΠΑΝΧΑΡΗ	Le Rider 1966: 31, nos 216–217
	Bronze	3rd–2nd cent. BC	Monograms	Svoronos 1890: 236–237
Polyrrhenia	Stater	End of 4th–beginning of 3rd cent. BC	ΧΑΡΙΣΘΕΝΗΣ	Svoronos 1890: 276–277, nos 2–6; Stefanakis 2013: 9–11, nos 3–7 and 19, nos 32–33
	Tetradrachm	80s–70s BC	Letters, abbreviated names and monograms	Svoronos 1890: 282, nos 41–42; Stefanakis 2013: 29, nos 110–12
Praisos	Stater	End of 4th–beginning of 3rd cent. BC	ΘΗΡΑΙΟΣ	Le Rider 1966: 217–218
	Bronze	3rd–2nd cent. BC	Κ, ΠΟ	Svoronos 1890: 292, nos 49–50
Priansos	Pseudo-athenian tetradrachm	86–83 BC	ΠΥΡΓΙΑΣ ΚΛ ΕΞΑΚΕΣΤΑΣ ΣΩΔΑΜΩ	Svoronos 1890: 298, no. 26; Le Rider 1968: 321

Table 5.1 *cont.* Personal names on Cretan coinage (4th cent. BC – 2nd cent. AD).

Bibliography

Primary Sources

Aristotle. *Politics*. Translated by H. Rackham. Loeb Classical Library 264. Cambridge: Harvard University Press, 1932.

Cicero. *Pro Lege Manilia. Pro Caecina. Pro Cluentio. Pro Rabirio Perduellionis Reo.* Translated by H. Grose Hodge. Loeb Classical Library 198. Cambridge: Harvard University Press, 1927.

Cicero. *Philippics* 1–6. Edited and translated by D.R. Shackleton Bailey; revised by J.T. Ramsey and G. Manuwald. Loeb Classical Library 189. Cambridge: Harvard University Press, 2010.

Dio Cassius. *Roman History,* Volume V: Books 46–50. Translated by E. Cary and H.B. Foster. Loeb Classical Library 82. Cambridge: Harvard University Press, 1917.

Plutarch. *Lives,* Volume II: *Themistocles and Camillus. Aristides and Cato Major. Cimon and Lucullus.* Translated by B. Perrin. Loeb Classical Library 47. Cambridge: Harvard University Press, 1914.

Secondary Sources

Andreou, A., A.G. Nikolakopoulou and V.E. Stefanaki. 2018. Προσκτήματα αρχαίων ελληνικών και ρωμαϊκών χρόνων του Νομισματικού Μουσείου (1964–2015), in H. Papaefthymiou (ed.) *International 2-day Symposium on Numismatics 'Mando Oeconomides,' Athens, 20–21 April 2016* (Ovolos 13): 195–216. Athens: Ekdose ton Philon tou Nomismatikou.

Apostolakou, V. 2006. Εξωτερικές σχέσεις των Ιεραπυτνίων τον 3ο αι. π.Χ. Η συνθήκη Ιεραπυτνίων-Σελεύκου Β΄, in Th. Detorakis and S. Papadaki-Oekland (eds) *Πεπραγμένα του Θ' Διεθνούς Κρητολογικού Συνεδρίου (Ελούντα, 1–6 Οκτωβρίου 2001)*, Vol. A5: 189–203. Herakleion: Hetaireia Kretikon Historikon Meleton.

Apostolou, E. 2016. Les plinthophores rhodiennes, les Romains et la première guerre mithridatique. *Revue Numismatique* 173: 123–138.

Asolati, M. 2009. A proposito di alcune questioni di numismatica cirenaica. *Numismatica e Antichità Classiche: Quaderni Ticnesi* 38: 179–203.

Baldwin Bowsky, M.W. 1989. Portrait of a polis: Lato pros Kamara (Crete) in the late second century B.C. *Hesperia* 58: 331–347.

Baldwin Bowsky, M.W. 1994. Cretan connections: the transformation of Hierapytna. *Cretan Studies* 4: 1–44.

Baldwin Bowsky, M.W. 1995. Roman Crete: no provincial backwater, in N.E. Papadogiannakis (ed.) *Πεπραγμένα του Ζ' Διεθνούς Κρητολογικού Συνεδρίου (Ρέθυμνο, 25–31 Αυγούστου 1991)*, Vol. A1: 41–67. Rethymnon: Demos Rethymnes, Historike kai Laographike Hetaireia Rethymnes.

Baldwin Bowsky, M.W. 2001. When the flag follows trade: Metellus, Pompey, and Crete, in E. Dąbrowa (ed.) *Roman Military Studies* (*Electrum* 5): 31–72. Kraków: Jagiellonian University Press.

Baldwin Bowsky, M.W. 2001a. Gortynians and the others: the case of the Antonii. *Eulimene* 2: 97–119.

Baldwin Bowsky, M.W. 2002. *Colonia Iulia Nobilis Cnosus* (Creta), in N.A. Livadara (ed.) *Proceedings of the 11th International Congress of Classical Studies, Kavala, 24–30 August 1999*, B: 75–89. Athens: International Federation of the Association of Classical Studies.

Baldwin Bowsky, M.W. 2004. Of two tongues: acculturation at Roman Knossos, in G. Salmeri, A. Raggi and A. Baroni (eds) *Colonie Romane nel Mondo Greco*: 95–150. Rome: L'Erma di Bretscheneider.

Baldwin Bowsky, M.W. 2006. Roman patronage, Greek identity: how Lyttos finally won the war against Knossos, in Th. Detorakis and S. Papadaki-Oekland (eds) *Πεπραγμένα του Θ' Διεθνούς Κρητολογικού Συνεδρίου (Ελούντα, 1–6 Οκτωβρίου 2001)*, Vol. A5: 407–419. Herakleion: Hetaireia Kretikon Historikon Meleton.

Baldwin Bowsky, M.W. 2007. From piracy to privileged status: Lappa (Crete) and the Romans, in M. Mayer, I. Olive, G. Baratta and A. Guzman Almagro (eds) *XII Congressus Internationalis Epigraphiae Graecae et Latinae: Provinciae imperii romani inscriptionibus descriptae, Barcelona, 3–8 Septembris 2002*: 197–202. Barcelona: Institut d'Estudis Catalans.

Baldwin Bowsky, M.W. 2011. All in the family: forming social and economic networks on Roman Crete, in K.T. Glowacki and N. Vogeikoff-Brogan (eds) *ΣΤΕΓΑ: The Archaeology of Houses and Households in Ancient Crete* (*Hesperia*, Suppl. 44): 431–440. Princeton: American School of Classical Studies at Athens.

Barron, J.P. 1966. *The Silver Coins of Samos*. London: Athlone Press.

BMC Crete etc. = Wroth, W. 1886. *Catalogue of Greek Coins in the British Museum, Crete and the Aegean Islands*. London: Trustees of the British Museum.

Bresson, A. 2001. Monétaires rhodiens du IIe siècle a. C.: onomastique et société, in A. Bresson and A. Descat (eds) *Les cités d'Asie Mineure occidentale au IIe siècle av. J.-C.*: 197–211. Bordeaux: Ausonius Éditions.

Brulé, P. 1986. Review of A. Petropoulou, *Beiträge zur Wirtschafts und Gesellschaftsgeschichte Kretas in hellenistischer Zeit*. *Gnomon* 58: 456–458.

Buttrey, T.V. 1987. Crete and Cyrenaica, in A.M. Burnett and M.H. Crawford (eds) *The Coinage of the Roman World in the Late Republic: Proceedings of a Colloquium held at the British Museum in September 1985* (British Archaeological Reports International Series 326): 165–174. Oxford: British Archaeological Reports.

Cameron, J.S. and G.F. Hill. 1913. Some Cretan coins. *Numismatic Chronicle* 13: 381–388.

Capdeville, G. 1997. Le droit international dans la Crète antique (VIIe / VIe–IIe / Ier s. av. J.-C.). *Comptes*

rendus des séances de l'Académie des Inscriptions et Belles-Lettres: 273–308. Paris: Klincksieck.

Carrier, C. 2018. La cité de Cnossos de l'époque classique à l'époque impériale: monnayages et histoire. Unpublished PhD dissertation, University of Paris IV-Sorbonne.

Carrier, C. and F. Chevrollier. 2016. Définitions chronologiques et géographiques des frontières de la province de Crète-Cyrénaïque au Ier siècle a. C.: l'apport des sources textuelles et numismatiques, in H. Berthelot, A. Boiché, P.-A. Caltot and M. Diarra (eds) *Vivre et penser les frontières dans le monde méditerranéen antique* (Scripta Antiqua 89): 67–80. Bordeaux: Ausonius Éditions.

Carrier, C. and V.E. Stefanaki. 2017. Le système des monnaies de bronze crétoises de l'époque hellénistique, in M. Caccamo Caltabiano (ed.) *Proceedings of the XVth International Numismatic Congress, Taormina, 21–25 September 2015*: 470–474. Rome and Messina: Arbor Sapientiae Editore.

CH = Coin Hoards, Vols I–X, 1975–2010.

Chaniotis, A. 1987. Ein neuer genealogischer Text aus Milet. *Epigraphica Anatolica: Zeitschrift für Epigraphik und historische Geographie Anatoliens* 10: 41–44.

Chaniotis, A. 1992. Die Inschriften von Amnisos, in J. Schäfer (ed.) *Amnisos: nach den archäologischen, historischen und epigraphischen Zeugnissen des Altertums und der Neuzeit*: 287–322. Berlin: Gebr. Mann.

Chaniotis, A. 1996. *Die Verträge zwischen kretischen Poleis in der hellenistischen Zeit.* Stuttgart: Franz Steiner Verlag.

Chaniotis, A. 2000. Hellenistic Lasaia (Crete): a dependent polis of Gortyn. New epigraphic evidence from the Asclepieion near Lasaia. *Eulimene* 1: 55–60.

Chaniotis, A. 2004. From communal spirit to individuality: the epigraphic habit in Hellenistic and Roman Crete, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. I: 75–87. Padua: Bottega d'Erasmo.

Chaniotis, A. 2005. Inscribed *instrumenta domestica* and the economy of Hellenistic and Roman Crete, in Z.H. Archibald, J.K. Davies and V. Gabrielsen (eds) *Making, Moving and Managing. The New World of Ancient Economies, 323–31 BC*: 92–116. Oxford: Oxbow Books.

Chaniotis, A. 2008. What difference did Rome make? The Cretans and the Roman Empire, in B. Forsén and G. Salmieri (eds) *The Province Strikes Back. Imperial Dynamics in the Eastern Mediterranean* (Papers and Monographs of the Finnish Institute of Athens 13): 83–105. Helsinki: Finnish Institute at Athens.

Chaniotis, A. 2010. Illusions of democracy in the Hellenistic World. *Athens Dialogues*, *November:* 1–58. <http://athensdialogues.chs.harvard.edu/cgi-bin/WebObjects/athensdialogues.woa/wa/dist?dis=43>

Chankowski, V. 2011. Monnayage et circulation monétaire à Délos aux époques classique et hellénistique, in T. Faucher, M.-C. Marcellesi and O. Picard (eds) *Nomisma: la circulation monétaire dans le monde grec antique: actes du colloque international, Athènes, 14–17 Avril 2010* (*Bulletin de Correspondance Hellénique,* Suppl. 53): 375–395. Athens: École française d'Athènes.

Chapman, A.E. 1968. Some first century BC bronze coins of Knossos. *Numismatic Chronicle*: 13–26.

Chevrolier, F. 2105. Épigraphie et identité. Autour de quelques lieux de mémoire dans la Crète d'époque romaine, in P. Louvier, Ph. Monbrun and A. Pierrot (eds) *Afti inè i Kriti ! Identités, altérités et figures crétoises*: 219–230. Bordeaux: Ausonius Éditions.

Chevrolier, F. 2016. Les monnayages communs à la Crète et à la Cyrénaïque au Ier siècle avant J.-C. et la formation de la province romaine. Vers une histoire partagée?, in M. Asolati (ed.) *Le Monete di Cirene e della Cirenaica nel Mediterraneo: Problemi e prospettive. Atti del V Congresso Internazionale di Numismatica e di Storia Monetaria*, *Padova, 17–19 marzo 2016*: 245–257. Padua: Esedra.

Coll. Traeger = Künker, Auction 136, 10 März 2008 (Osnabrück), *Antike Münzen der Insel Kreta, Die Sammlung Dr. Burkhard Traeger.*

Coutsinas, N. and V.E. Stefanaki. Forthcoming. Defence and coinage in the late Classical and Hellenistic Crete, in *Proceedings of 19th International Congress of Classical Archaeology, Cologne and Bonn, 22–26 May 2018*.

Davaras, C. 1980. Κρητικές Επιγραφές 3. *Αρχαιολογική Εφημερίς*: 1–25.

Davaras, C. and O. Masson. 1983. Cretica: Amnisos et ses inscriptions. *Bulletin de Correspondance Hellénique* 107: 383–404.

De Callataÿ, F. 2004. Le monnayage d'argent au type d'Athéna Parthénos émis au nom des Ainianes, in L. Kypraiou (ed.) *Coins in the Thessalian Region: Mints, Circulation, Iconography, History: Ancient, Byzantine, Modern: Proceedings of the Third Scientific Meeting, Volos, 24–27 Mai 2001* (*Ovolos* 7): 125–156. Athens: Ekdose ton Philon tou Nomismatikou.

De Callataÿ, F. 2011. More than it would seem: the use of coinage by the Romans in late Hellenistic Asia Minor (133–63 BC). *American Journal of Numismatics* 23: 55–86.

De Callataÿ, F. 2012. Control marks on Hellenistic royal coinages: use, and evolution toward simplification. *Revue Belge de Numismatique et de Sigillographie* 158: 39–62.

De Callataÿ, F. 2015. The late Hellenistic didrachms of Leukas: another case of Greek coinage for the Roman army, in P.G. van Alfen, G. Bransbourg and M. Amandry (eds) *Fides: Contributions to Numismatics in Honor of Richard B. Witschonke*: 239–267. New York: The American Numismatic Society.

De Callataÿ, F. 2016. The coinages struck for the Romans in Hellenistic Greece: a quantified overview (mid 2nd–mid 1st c. BCE), in F. Haymann, W. Hollstein and M. Jehne (eds) *Neue Forschungen zur Münzprägung der Römischen Republik: Beiträge zum internationalen Kolloquium im Residenzschloss Dresden, 19.–21. Juni 2014* (*Nomismata* 8): 315–338. Bonn: Habelt.

De Souza, P. 1988. Late Hellenistic Crete and the Roman conquest, in W.G. Cavanagh and M. Curtis (eds) *Post Minoan Crete: Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College London, 10–11 November 1995* (British School at Athens Studies 2): 112–116. London: British School at Athens.

Gagarin, M. and P.J. Perlman. 2016. *The Laws of Ancient Crete, c. 650–400 BCE.* Oxford: Oxford University Press.

Gauthier, P. 1975. Légendes monétaires grecques, in J.M. Dentzer, P. Gauthier and T. Hackens (eds) *Numismatique antique, problèmes et méthodes, actes du colloque organisé à Nancy du 27 septembre au 2 octobre 1971* (*Annales de l'Est*, Mémoire 44): 165–180. Leuven: Edition Peeters.

Guizzi, F. 2001. *Hierapytna, storia di una polis cretese dalla fondazione alla conquista romana* (Atti della Academia Nazionale dei Lincei). Rome: Accademia nazionale dei Lincei.

Habicht, C. 1991. Zu den Münzmagistraten der Silberprägung des Neuen Stils. *Chiron* 21: 1–23.

Habicht, C. 1995. *Athen. Die Geschichte der Stadt in hellenistischer Zeit*. Munich: C.H. Beck.

Hamon, P. 2007. Élites dirigeantes et processus d'aristocratisation à l'époque hellénistique, in H.-L. Fernoux and C. Stein (eds) *Aristocratie antique, Modèles et exemplarité sociale*: 79–100. Dijon: Ed. universitaires de Dijon-Université de Bourgogne.

Harl, K. 1987. *Civic Coins and Civic Politics in the Roman East, A.D. 180–275*. Berkeley: University of California Press.

Harris, W.V. 1999. Crete in the Hellenistic and Roman economies: a comment, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 353–358. Stuttgart: Franz Steiner Verlag.

Harrison, G.W.M. 1988. Background to the first century of Roman rule in Crete. *Cretan Studies* 1: 125–155.

Harrison, G.W.M. 1993. *The Romans and Crete*. Amsterdam: Adolf M. Hakkert.

Harrison, G.W.M. 1998. Crete the ordinary, in W.G. Cavanagh and M. Curtis (eds) *Post Minoan Crete: Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College London, 10–11 November 1995* (British School at Athens Studies 2): 129–134. London: British School at Athens.

Helly, B. 1987. Les émissions monétaires de la confédération thessalienne (IIe–Ier s. av. J.-C.), in G. Depeyrot, T. Hackens and G. Moucharte (eds) *Rythmes de la production monétaire, de l'antiquité à nos jours. Actes du colloque international organisé à Paris du 10 au 12 janvier 1986*: 39–53. Louvain-la-Neuve: Séminaire de numismatique Marcel Hoc, Collège Érasme.

Howgego, C.J. 2005. Coinage and identity in the Roman provinces, in C.J. Howgego, H. Volker and A. Burnett (eds) *Coinage and Identity in the Roman Provinces*: 1–17. Oxford: Oxford University Press.

IC = Guarducci, M. 1935–1950. *Inscriptiones Creticae*, Vols I–IV. Rome: Libreria dello Stato.

IGCH = Thompson, M., O. Mørkholm and C.M. Kraay (eds) 1973. *An Inventory of Greek Coin Hoards*. New York: International Numismatic Commission by the American Numismatic Society.

Ingvaldsen, H. 2002. *Cos, Coinage and Society, the Chronology and the Faction of a City State Coinage in the Classical and Hellenistic Period (390–170 BC)*. Series of dissertations submitted to the Faculty of Arts, University of Oslo, No. 149. Oslo: Unipub AS.

Jackson, A.E. 1971. The bronze coinage of Gortyne. *Numismatic Chronicle* 11: 37–51.

Jones, N.F. 1979. The autonomous wreathed tetradrachms of Magnesia on-Maeander. *American Numismatic Society Museum Notes* 24: 63–109.

Katsari, C. 2006. The development of political identities in Roman Phrygia from the second century BC to the third century AD: the case of Amorium. *Annali* 52: 87–117.

Kroll, J. 1964. The late Hellenistic tetrobols of Kos. *American Numismatic Society Museum Notes* 11: 81–117.

Lagoyianni-Georgakarakou, M. 1995. Ο ρωμαϊκός προπαγανδισμός στη νομισματοκοπία της Κρήτης, in N.E. Papadogiannakis (ed.) *Πεπραγμένα του Z' Διεθνούς Κρητολογικού Συνεδρίου (Ρέθυμνο, 25–31 Αυγούστου 1991)*, Vol. A1: 513–522. Rethymnon: Demos Rethymnes, Historike kai Laographike Hetaireia Rethymnes.

Lefebvre, S. 2013. La réorganisation de la Crète après la bataille d'Actium. Le rôle de M.N. Nonius Balbus, patron de province. *Ktèma* 38: 249–272.

Le Quéré, E. 2015. *Les Cyclades sous l'Empire romain. Histoire d'une renaissance*. Rennes: Presses Universitaires de Rennes.

Le Rider, G. 1966. *Monnaies crétoises du Vème au Ier siècle av. J.-C.* (Études Crétoises 15). Paris: P. Geuthner.

Le Rider, G. 1968. Un groupe des monnaies crétoises à types athéniens, in *Humanisme actif, Mélanges d'art et de littérature offerts à Julien Cain*: 313–335. Paris: Hermann.

LGPN 1 = Fraser, P.M. and E. Matthews 1987. *A Lexicon of Greek Personal Names,* Vol. 1: *The Aegean Islands, Cyprus, and Cyrenaica*. Oxford: Oxford University Press.

Masson, O. 1979. Cretica (Noms de monétaires à Hiérapytna). *Bulletin de Correspondance Hellénique* 103: 57–82.

Meadows, A. 2002. Sratonikeia in Caria: the Hellenistic city and its coinage. *Numismatic Chronicle* 162: 79–134.

Meadows, A. 2010. Samos, in The Pixodarus Hoard. *Coin Hoards* 9: 217–218.

Mendoni, L.G. and S.B. Zoumbaki. 2008. *Roman Names in the Cyclades*, Part 1 (*Meletemata* 56). Athens: Research Centre for Greek and Roman Antiquity, National Hellenistic Research Foundation.

Meta, A. 2010. *Le monnayage en argent de Dyrrachion, 375–60/55 av. J.-C.*, (Recherches Archéologiques Franco-Albanaises 1). Athens: École Française d'Athènes

Meta, A. 2012. Names and mintmarks at the mint of Dyrrhachium (c. 230–60/55 BC): a case study. *Revue Belge de Numismatique et de Sigillographie* 158: 21–38.

Metenidis, N. 1998. Artemis Ephesia: the political significance of the Metellus coins, in W.G. Cavanagh and M. Curtis (eds) *Post Minoan Crete: Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College London, 10–11 November 1995* (British School at Athens Studies 2): 117–122. London: British School at Athens.

Metenidis, N. 2000. Überlegungen zu einigen frühkaiserzeitlichen Gegenstempeln auf knossichen Münzen, in B. Kluge and B. Weisser (eds) *XII. Internationaler Numismatischer Kongress, Berlin 1997*, Vol. I: 693–696. Berlin: Staatliche Museen zu Berlin.

Metenidis, N. 2004. Από τη δραχμή στο δηνάριο: Βάση και μετάβαση του κρητικού νομισματικού συστήματος, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000),* Vol. I: 171–179. Padua: Bottega d'Erasmo.

Mielczarek, M. 2013. More on the labyrinth on the coins of Cnossus. *Studies in Ancient Art and Civilization* 17: 127–138.

Münsterberg, R. 1973. *Die Beamtennamen auf der Grieschischen Münzen* (Subsidia Epigraphica 3). Hildesheim and New York: Georg Olms.

Oeconomides-Caramessini, M. 1981. Trésor des statères crétois trouvés à Charakas, IGCH 109. *Numismatica e Antichità Classiche* 10: 115–129.

Pałuchowski, A. 2003. Les élites urbaines en Crète sous le Haut Empire. Unpublished PhD dissertation, University of Tours.

Pałuchowski, A. 2005. *Fastes des protocosmes des cités crétoises sous le Haut Empire* (*Antiquitas* 27). Wroclaw: Wydawn. Uniwersytetu Wroclawskiego.

Pałuchowski, A. 2008. *La coloration sociale des noms de personnes grecs sur l'exemple de notables crétois sous le Haut Empire* (Acta Universitatis Wratislaviensis 3110; *Antiquitas* 30). Wroclaw: Wydawn. Uniwersytetu Wroclawskiego.

Pałuchowski, A. 2011. La Romanisation de l'île de Crète, in S. Ruciński, C. Balbuza and C. Kròlczyk (eds) *Studia Lesco Mrozewicz* (Publikacje Instytutu Historii UAM 103): 299–322. Poznań: Instytut Historii UAM.

Pałuchowski, A. 2012. La progression de la citoyenneté romaine parmi les notables crétois. *Eos* 99: 91–151.

Perl, G. 1970. Die römischen Provinzbeamten in Cyrenae und Creta zur Zeit der Republik. *Klio* 52: 319–354.

Perlman, P. 1992. One hundred-citied Crete and the Cretan ΠΟΛΙΤΕΙΑ. *Classical Philology* 87: 193–205.

Petropoulou, A. 1985. *Beiträge zur Wirtschafts und Gesellschaftsgeschichte Kretas in hellenistischer Zeit*. Frankfurt and Bern: Peter Lang.

Piatkowski, A. 1973. La résistance crétoise contre la conquête romaine, commentée par Dion Cassius, in G. Babiniotis (ed.) *Πεπραγμένα του Γ' Διεθνούς Κρητολογικού Συνεδρίου (Ρέθυμνο, 18–23 Σεπτεμβρίου 1971)*, Vol. A: 215–220. Athens: Ipouryio Politismou kai Epistimon.

Picard, O. 1997. Monnaies de fouilles et histoire grecque: l'exemple de Thasos, in K.A. Sheedy and C. Papageorgiadou-Banis (eds) *Numismatic Archaeology, Archaelogical Numismatics. Proceedings of an International Conference held to honour Dr. Mando Oeconomides in Athens 1995* (Oxbow Monograph 75): 29–39. Oxford: Oxbow Books.

Picard, O. 2010. Rome et la Grèce à la basse période hellénistique: monnaies et impérialisme. *Journal des Savants* 2 (juillet–décembre): 161–192.

Picard, O. and S. Gjongecaj. 2001. Apollonia et le monnayage épirote: Le trésor de Bakërr. *Revue Numismatique* 157: 223–249.

Price, M.J. 1982–1983. Crete, Cyrene and Dio L.II.30.9. *Israel Numismatic Journal* 6–7: 118–127.

Rizakis, A.D. 1996. Anthroponymie et société. Les noms romains dans les provinces hellénophones de l'Empire, in A.D. Rizakis (ed.) *Roman Onomastics in the Greek East: Social and Political Aspects, Proceedings of the International Colloquium on Roman Onomastics, Athens, 7–9 September 1993* (*Meletemata* 21): 11–29. Paris: De Boccard.

Rizakis, A.D. 2015. The Greek ruling class under the empire: a privileged mediator between Rome and the cities, in A.D. Rizakis (ed.) *Proceedings of the Second Euro-Japanese Colloquium of the Ancient Mediterranean World: Social Norms and Public Sphere, held at the University of Tokyo in 2009.3.27–29* (Kodai 16): 143–159. Tokyo: Editorial Board of Kodai.

Rizakis, A.D. 2018. Les notables grecs sous la domination romaine: puissance économique, réseaux sociaux et cosmopolitisme, in C. Chillet, C. Courrier and L. Passet (eds) *Arcana Imperii: Mélanges d'histoire économique, sociale et politique, offerts au Professeur Yves Roman*, Vol. 2: 271–306. Paris: De Boccard.

Robert, L. 1973. Les monétaires et un décret hellénistique de Sestos. *Revue Numismatique* 15: 43–53.

Rouanet-Liesenfelt, A.-M. 1984. Le Crétarque Kydas, in *Aux origines de l'hellénisme: la Crète et la Grèce, Hommages à Henri van Effenterre* (Histoire Ancienne et Médiévale 15): 343–352. Paris: Publications de la Sorbonne.

Rouanet-Liesenfelt, A.-M. 1997. Remarques sur l'assemblée provinciale crétoise et son grand-prêtre à l'époque du Haut-Empire. *Ktèma* 19: 7–25.

RPC I = Amandry, M., A. Burnett and P.P. Ripollès. 1992. *Roman Provincial Coinage. From the Death of Caesar to the Death of Vitellius (44 BC–AD 69)*, Vol. I. London: British Museum Press.

RPC II = Burnett, A., M. Amandry and I. Carradice. 1999. *Roman Provincial Coinage. From Vespasian to Domitian (AD 69–96)*, Vol. II. London: British Museum Press.

Sanders, I.F. 1982. *Roman Crete. An Archaeological Survey and Gazetteer of Late Hellenistic, Roman, and Early Byzantine Crete*. Warminster: Aris and Phillips.

Sherk, R.K. 1990. The eponymous officials of the Greek cities: mainland Greece and the adjacent islands. *Zeitschrift für Papyrologie und Epigraphik* 84: 231–295.

Sidiropoulos, K. 2004. Νομισματική Ιστορία της Ρωμαϊκής και Πρωτοβυζαντινής Κρήτης (67 π.Χ. – 827 μ.Χ.): *Testimonia et Desiderata*, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. I: 193–223. Padua: Bottega d'Erasmo.

SNG Delepierre = 1983. *Sylloge Nummorum Graecorum*, *France*, *Cabinet des Médailles*, Vol. 1, *Collection Jean et Marie Delepierre*. Paris: La Bibliothèque.

Sonnabend, H. 2004. Roman rule and Cretan identity. The impact on society and culture, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. I: 25–28. Padua: Bottega d'Erasmo.

Spyridakis, S. 1979. Crete and the Romans. *Κρητολογία* 9: 85–98.

StaatsV. III = Schmitt, H.H. 1969. *Die Staatsverträge des Altertums III = Die Verträge der griechisch-römischen Welt von 338 bis 200 v. Chr*. Munich: C.H. Beck.

Stefanakis, M.I. 1997. Studies in the Coinages of Crete with Particular Reference to Kydonia. Unpublished PhD dissertation, University of London.

Stefanakis, M. I. 1999. The introduction of monetary economy and the beginning of local minting in Crete, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 247–268. Stuttgart: Franz Steiner Verlag.

Stefanakis, M.I. 2013. *Η Νομισματική παραγωγή της Πολυρρήνιας από τον 4ο αι. π.Χ. μέχρι τον 1ο αι. μ.Χ.* (*Eulimene* Series I). Rethymnon: Mediterranean Archaeological Society.

Stefanakis, M.I. 2019. The testimony of the coins, in N. Chr. Stampolides, D.I. Tsangari and M. Giannopoulou (eds) *Cretan Cities, The Testimony of the Coins*: 69–76. Athens: University of Crete, Ephorate of Antiquities of Rethymno, Museum of Ancient Eleutherna.

Stefanaki, V.E. 2007–2008. La politique monétaire des cités crétoises à l'époque classique et hellénistique. *Eulimene* 8–9: 47–80.

Stefanaki, V.E. 2012, *Νομίσματα-Νομισματική Αιγαίου, Κως*, Vol. I. Athens: Archaeological Receipts Fund.

Stefanaki, V.E. and K.E. Stratiki. 2007–2008. Ο Απόλλωνας στα νομίσματα της Ελεύθερνας. Ερμηνευτική Προσέγγιση. *Eulimene* 8–9: 81–106.

Stefanaki, V E. and M.I. Stefanakis. 2013. Le monnayage d'argent de Gortyne entre la seconde moitié du IIIe s. et le premier quart du Ier s. av. J.-C.: remarques préliminaires. *Revue Numismatique* 170: 147–174.

Stefanaki, V.E. 2021. *Hiérapytna, Histoire et Monnayage jusqu'à la conquête romaine* (*Kerma* Series V). Ioannina: Society for the Study of Numismatics and Economic History.

Stefanaki, V.E. and C. Carrier. 2020. Les monnaies crétoises du premier tiers du Ier s. av. J.-C.: état de la question et perspectives de recherche, in R. Cantilena and F. Carbone (eds) *Monetary and Social Aspects of Hellenistic Crete. International Conference, Italian School of Archaeology at Athens (13–14 June 2018)* (*Annuario della scuola archeologica di Atene e delle missioni italiane in Oriente*, Suppl. 8): 245–259. Athens: Scuola archeologica italiana di Atene.

Svoronos, J.-N. 1890. *Numismatique de la Crète Ancienne*. Macon: R. Habelt (2nd edition, Bonn 1972).

Sweetman, R. 2006. Knossos: processes of Romanization, in Th. Detorakis and S. Papadaki-Oekland (eds) *Πεπραγμένα του Ό Διεθνούς Κρητολογικού Συνεδρίου (Ελούντα, 1–6 Οκτωβρίου 2001)*, Vol. A5: 421–434. Herakleion: Hetaireia Kretikon Historikon Meleton.

Tansey, P. 2008. Q. Aemilius Lepidus (Barbula?) Cos. 21 B.C. *Historia: Zeitschrift für Alte Geschichte*, Bd. 57, H. 2: 174–207.

Touratsoglou, I. and K. Sidiropoulos. 2000. Οι νομισματικοί Θησαυροί της Ρωμαϊκής Κρήτης: Μία Πρώτη Προσέγγιση, in N. Panagiotakis and Th. Detorakis (eds) *Πεπραγμένα του Η΄ Διεθνούς Κρητολογικού Συνεδρίου (Ηράκλειο, 9–14 Σεπτεμβρίου 1996)*, Vol. A3: 287–296. Herakleion: Hetairia Kretikon Historikon Meleton.

Tsangari, D.I. 2007. *Corpus des Monnaies d'or, d'argent et de bronze de la Confédération Étolienne.* Athens: Helicon.

Tsougarakis, D. 1987. Ρωμαϊκή Κρήτη, in N.M. Panagiotakis (ed.) *Κρήτη, Ιστορία και Πολιτισμός*, t. 1: 285–336. Crete: Syndesmos Topikon Enoseon Demon kai Koinotiton Kritis.

Tzamtzis, I.E. 2013. *Creta Romana, Πηγές δικαίου, πολιτικοί και κοινωνικοί θεσμοί στην Κρήτη κατά την ρωμαϊκή περίοδο (67 π.Χ.–235 μ.Χ.)* (TALOS 21). Chania: Periodical edition of the Cretan Law Institute.

Vagionakis, I. 2017. Damiorgoi e kosmoi: problemi aperti sull'eponimia nella Creta ellenistica. *Zeitschrift für Papyrologie und Epigraphik* 203: 111–118

Van Effenterre, H. and M. Van Effenterre. 1989. Un obituaire crétois?. *Αριάδνη* 5: 99–107.

Van Effenterre, H., I. Papaoikonomou and A.-M. Liesenfelt. 1983. Base inscrite de Kydonia. *Bulletin de Correspondance Hellénique* 107: 405–419.

Viviers, D. 1999. Economy and territorial dynamics in Crete from the Archaic to the Hellenistic period, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 221–233. Stuttgart: Franz Steiner Verlag.

Von Reden, S. 1997. Money, law and exchange: coinage in the Greek polis. *Journal of Hellenic Studies* 127: 154–176.

Weiss, P. 2005. The cities and their money, in C.J. Howgego, H. Volker and A. Burnett (eds) *Coinage and Identity in the Roman Provinces:* 57–68. Oxford: Oxford University Press.

Youni, M.S. 2011. *Η γένεση του γραπτού νόμου στη δωρική Κρήτη*. Thessaloniki: Banias.

Zoumbaki, S.B. 2008. The composition of the Peloponnesian elites in the Roman period and the evolution of their resistance and approach to the Roman rulers. *Τεκμήρια* 9: 25–51.

6.

Τάφοι και Ταφικές Πρακτικές στο Αρχαίο Ρύτιο

Καλλιόπη Γκαλανάκη, Χριστίνα Παπαδάκη, Κλέανθης Σιδηρόπουλος

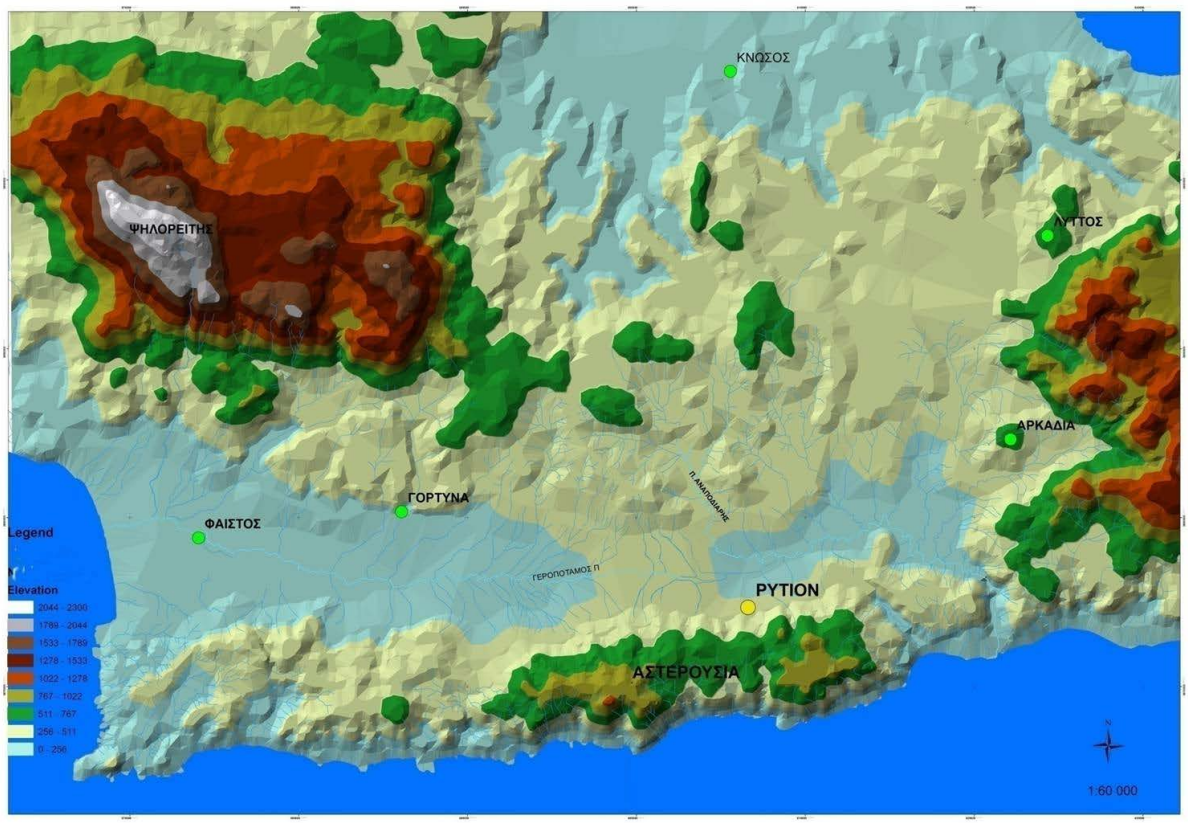
Εικόνα 6.1. Άποψη του ανατολικού τμήματος της πεδιάδας της Μεσαράς και των Αστερουσίων, από ΒΔ. Στο βάθος, από Α προς Δ, διακρίνονται οι σύγχρονοι οικισμοί Μεσοχωριό, Ροτάσι και Πύργος (Μ. Σπυριδάκης).

Γενικά τοπ(ι)ογραφικά δεδομένα

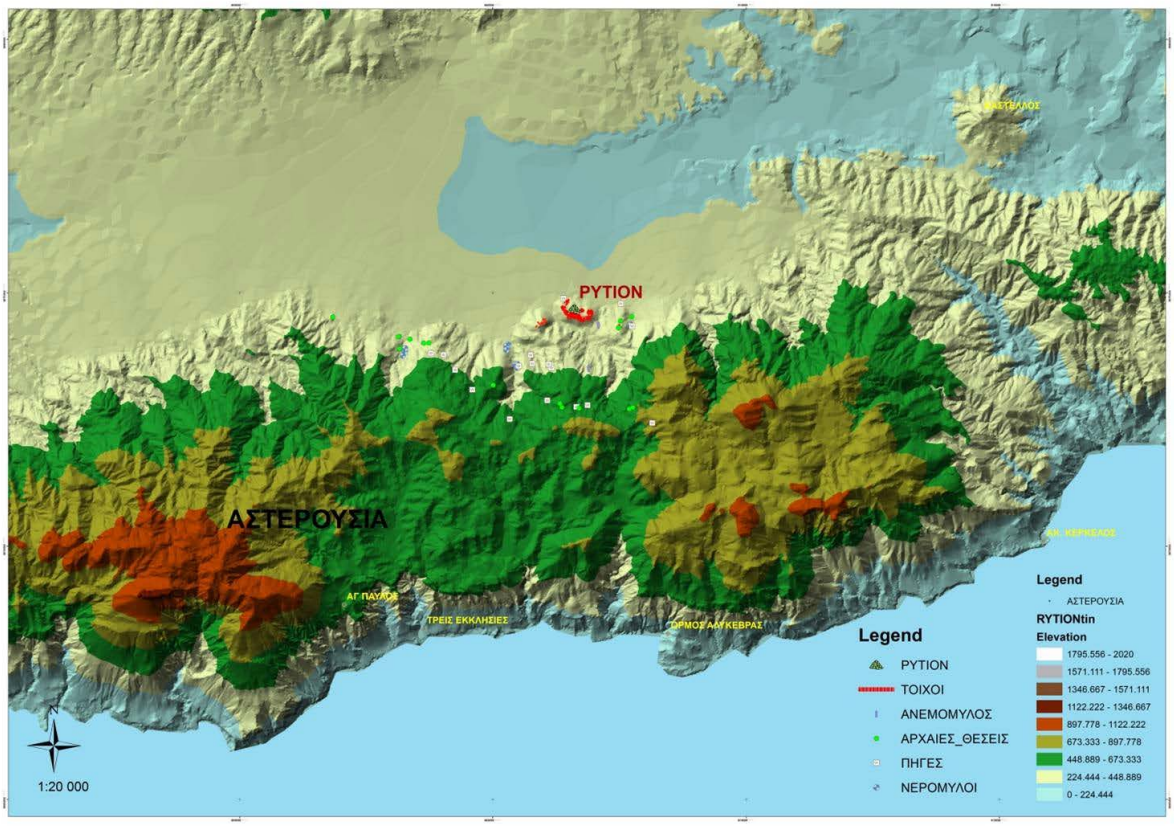
Η επικράτεια της αρχαίας πόλης του Ρύτιου εκτείνεται στα βόρεια ριζά του ορεινού όγκου των Αστερουσίων, από το Λιβυκό πέλαγος ως τον ελώδη κάμπο της ανατολικής Μεσαράς, τα πλημμυρικά ύδατα του οποίου διοχετεύονται ανατολικά στον *Γεροπόταμο* και δυτικά στον άνω ρου του *Αναποδάρη* (Ξιφαράς 2004: 171), μέχρι την *Κεφάλα* Λιγόρτυνου και τον ψηλότερο, προς δυσμάς, λόφο της *Παραθάμνας* (**εικ. 6.1**, **χάρτες 6.1–2**). Το ύψωμα *Κάστελλος* στα ανατολικά συνιστά το φυσικό γεωγραφικό όριο των όμορων επικρατειών Ρυτίου - Πριανσού στα δυτικά και Αρκαδίας - Λύκτου στα ανατολικά (**χάρτες 6.1–2**) (Βλ. και Ξιφαράς 2004: 171). Η νευραλγική θέση του Ρυτίου, στο οδικό δίκτυο που συνδέει τη νότια με τη βόρεια Κεντρική Κρήτη και την ενδοχώρα της, ήδη στην αρχαιότητα, ευνοεί τις επαφές με την Αρκαδία, τη Γόρτυνα, την Πριανσό, την Ίνατο και την Κνωσό (**χάρτες 6.1–2**) (Desborough 1995: 234; Εγγλέζου 2013: 139).

Τα τοπ(ι)ογραφικά και γεωμορφολογικά πλεονεκτήματα του Ρυτίου, που επιτρέπουν τον έλεγχο μιας ενδοχώρας ορεινής με διεξόδους στη θάλασσα, και η φυσική προστασία που διασφαλίζουν προπάντων τα Αστερούσια, συνέβαλαν στην αδιάλειπτη κατοίκηση της περιοχής ήδη στην Εποχή του Χαλκού. Την ακμή και ευρωστία του αντανακλά, μεταξύ άλλων, η συμπερίληψή του, με εφτά ακόμη κρητικές πόλεις,[1] στον περίφημο Νηών Κατάλογο της *Ιλιάδας* (Β 645–652), ενώ τη σπουδαιότητά του επισημαίνουν αρκετοί από τους περιηγητές του περασμένου αιώνα με τον Thomas Spratt να ταυτίζει πρώτος τα αρχιτεκτονικά κατάλοιπα στην *Κεφάλα* (Spratt 1865: 332–335). Μαζί του θα συμφωνήσουν οι «πιονιέροι» της κρητικής αρχαιολογίας, Arthur Evans, που επισκέπτεται την περιοχή στις 2 Απριλίου 1894 (Pendlebury *et al.* 1932–1933: 86; Βελεγράκη, forthcoming), και Lucio Mariani, που κάνει λόγο ακόμη

[1] Οι άλλες πόλεις είναι η Κνωσός, η Γόρτυνα, η Λύκτος, η Μίλητος, η Λύκαστος και η Φαιστός.



Χάρτης 6.1. Η πεδιάδα της Μεσαράς (Μ. Σπυριδάκης).



Χάρτης 6.2. Η ευρύτερη περιοχή του Ρυτίου (Μ. Σπυριδάκης).

Εικόνα 6.2. Κατάλοιπα της αρχαίας οχύρωσης στην Κεφάλα (Μ. Σπυριδάκης).

Εικόνα 6.3. Τμήμα της αρχαίας οχύρωσης στην Κεφάλα (Μ. Σπυριδάκης).

Εικόνα 6.4. Κατάλοιπα της αρχαίας οχύρωσης στα Φραγκοχάρακα (Μ. Σπυριδάκης).

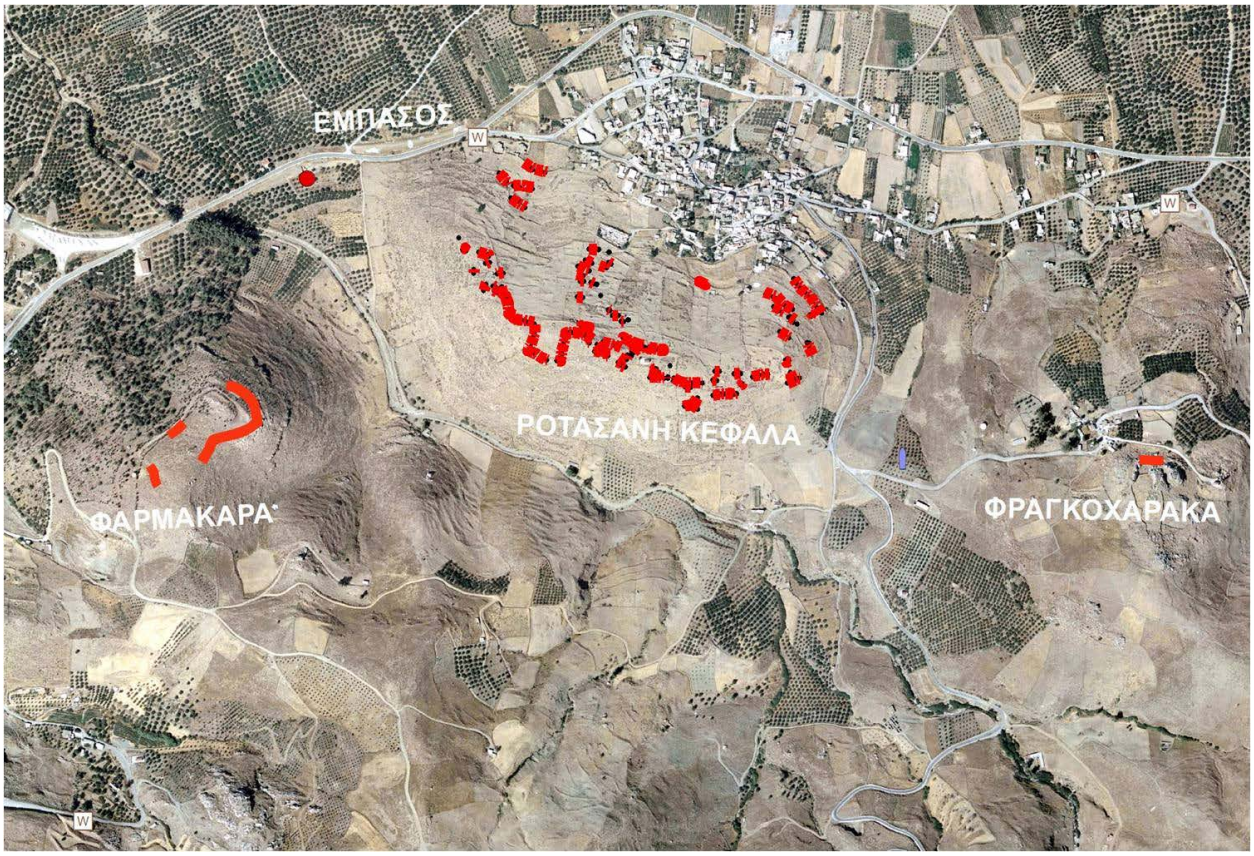
Εικόνα 6.5. Τμήμα της αρχαίας οχύρωσης στη Φαρμακαρά (Μ. Σπυριδάκης).

και για την ύπαρξη πιθανού «μεγάρου» στον λόφο της Κεφάλας (Pernier 1935: 22; Βελεγράκη, forthcoming). Πληροφορίες για το Ρύτιο υπάρχουν επίσης σε αρχαίους περιηγητές, γεωγράφους, λεξικογράφους και συγγραφείς εγκυκλοπαιδικών έργων (Βελεγράκη, forthcoming: σημ. 2).

Παραδόσεις, τυχαίες περισυλλογές και σωστικές ανασκαφές τεκμηριώνουν τη διαχρονία του ιστορικού τοπίου της περιοχής. Η μινωική παρουσία εντοπίζεται βόρεια της *Κεφάλας* ως τα δυτικά όρια της πεδινής ανατολικής Μεσαράς, όπου, στη θέση *Δαμάντρι,* έχουν αποκαλυφθεί τα λείψανα ενός σημαντικού κτηριακού συγκροτήματος. Τμήμα από εκτεταμένη, αλλά σε άσχημη κατάσταση διατήρησης, μινωική εγκατάσταση διερευνήθηκε το 1957 στη θέση *Ασπρολίβαδα*, απ' όπου επίσης προέρχεται ένας «θησαυρός» χάλκινων εργαλείων και όπλων που χρονολογείται στην Νεοανακτορική περίοδο (Πλάτων 1957: 339; 1958: 480; Μανδαλάκη 2019, λήμματα αρ. 31–38 με την παλιότερη βιβλιογραφία). Πέντε μεσομινωικά αγγεία από οφείτη βρέθηκαν στον *Λειβαδίτη* (Αλεξίου 1969: 540; 1969α: 414), ενώ νοτιότερα, στις περιοχές *Φαρμακαρά* και *Εμπασού*, πρόσφατη σωστική έρευνα αποκάλυψε,[2] μεταξύ άλλων, εκτενή οικιστικά κατάλοιπα των Νεοανακτορικών χρόνων. Μολονότι αποσπασματικά, τα παραπάνω ευρήματα υποδεικνύουν ότι η περιοχή που αντιστοιχεί στο Ρύτιο των ιστορικών χρόνων, κατά τη διάρκεια της Εποχής του Χαλκού, εγγράφεται σε ένα πυκνό δίκτυο ακρορεινών οικισμών και εύρωστων περιφερειακών κέντρων που αναπτύσσονται στην πεδιάδα της Ανατολικής Μεσαράς, τα γύρω υψώματα και τον ορεινό όγκο των Αστερουσίων ως τη νότια ακτογραμμή, συνθέτοντας ένα πολύ ενδιαφέρον αρχαιοτοπίο.

Στους ιστορικούς χρόνους παγιώνεται ο κομβικός ρόλος του Ρυτίου ως μεθόριας περιοχής ανάμεσα στις δύο εκτενέστερες πεδιάδες της κρητικής ενδοχώρας, αυτές της Πεδιάδας και της Μεσαράς, αντίστοιχα. Ο οικισμός των πρώιμων ιστορικών και ελληνιστικών χρόνων (Faure 1960; Kirsten 1940: 1153; Ξανθουδίδης 1916: 24; Pendlebury *et al.* 1932–1933: 86; Πλάτων 1948: 531; 1959: 387; Sanders 1982: 150 (Site 7/21); Φαράκλας 1998: 119) καταλαμβάνει τα βόρεια πρανή του τρίλοφου που συνθέτουν η τειχισμένη ακρόπολη της *Κεφάλας* με τα επίσης τειχισμένα υψώματα *Φραγκοχάρακα* ανατολικά και *Φαρμακαρά - Πύργου* δυτικά, έχοντας ως φυσικά μεταξύ τους όρια τις πυκνές διακλαδώσεις και τους παραπόταμους του Αναποδάρη (**χάρτης 6.3, εικ. 6.2, 6.3, 6.4, 6.5**). Ειδικότερα η ρωμαϊκή πόλη, ως επικράτεια

[2] Πραγματοποιήθηκε το 2007–2008, με αφορμή τη διαπλάτυνση της επαρχιακής οδού Πύργου - Ροτασίου.



Χάρτης 6.3α–β. Αεροφωτογραφία (α: πάνω) και φωτογραμμετρικό σχέδιο (β: κάτω) των οχυρωματικών καταλοίπων στο τρίλοφο Φραγκοχάρακων, Ροτασανής Κεφάλας και Φαρμακαράς (Μ. Σπυριδάκης).

Εικόνα 6.6. Ευρήματα παλαιών ανασκαφών στο Ρύτιο (Γ. Παπαδάκης-Πλουμίδης).

Εικόνα 6.7. Ευρήματα παλαιών ανασκαφών στο Ρύτιο (Γ. Παπαδάκης-Πλουμίδης).

της Γόρτυνας πια, επεκτείνεται ακόμη βορειότερα, στις όμορες πεδινές εκτάσεις, από τον *Ξηρόκαμπο* έως τα *Πραιτώρια*, όπου σώζονται σημαντικά αρχιτεκτονικά λείψανα που σχετίζονται με τη διαχείριση των υδάτινων πόρων της περιοχής (Μανδαλάκη 1996: 641). Επισημαίνεται ότι από τον όρμο της *Αλυκέβρας* ως το ακρωτήρι *Κέρκελλο* δυτικά της Ινάτου και από τις *Τρεις Εκκλησιές* ως τον *Άγιο Παύλο* εντοπίζονται επιφανειακά κατάλοιπα ημιορεινών και μεθόριων οικισμών σε φυσικά οχυρές θέσεις με καλές ορατότητες (Ξιφαράς 2004: 171–173), που διασφάλιζαν τόσο τον έλεγχο των περασμάτων από την πεδιάδα της Μεσαράς προς τη νότια ακτογραμμή όσο και την αξιοποίηση των πλούσιων πεδινών, ορεινών και παράλιων εκτάσεων της ευρύτερης επικράτειας των ανατολικών Αστερουσίων.

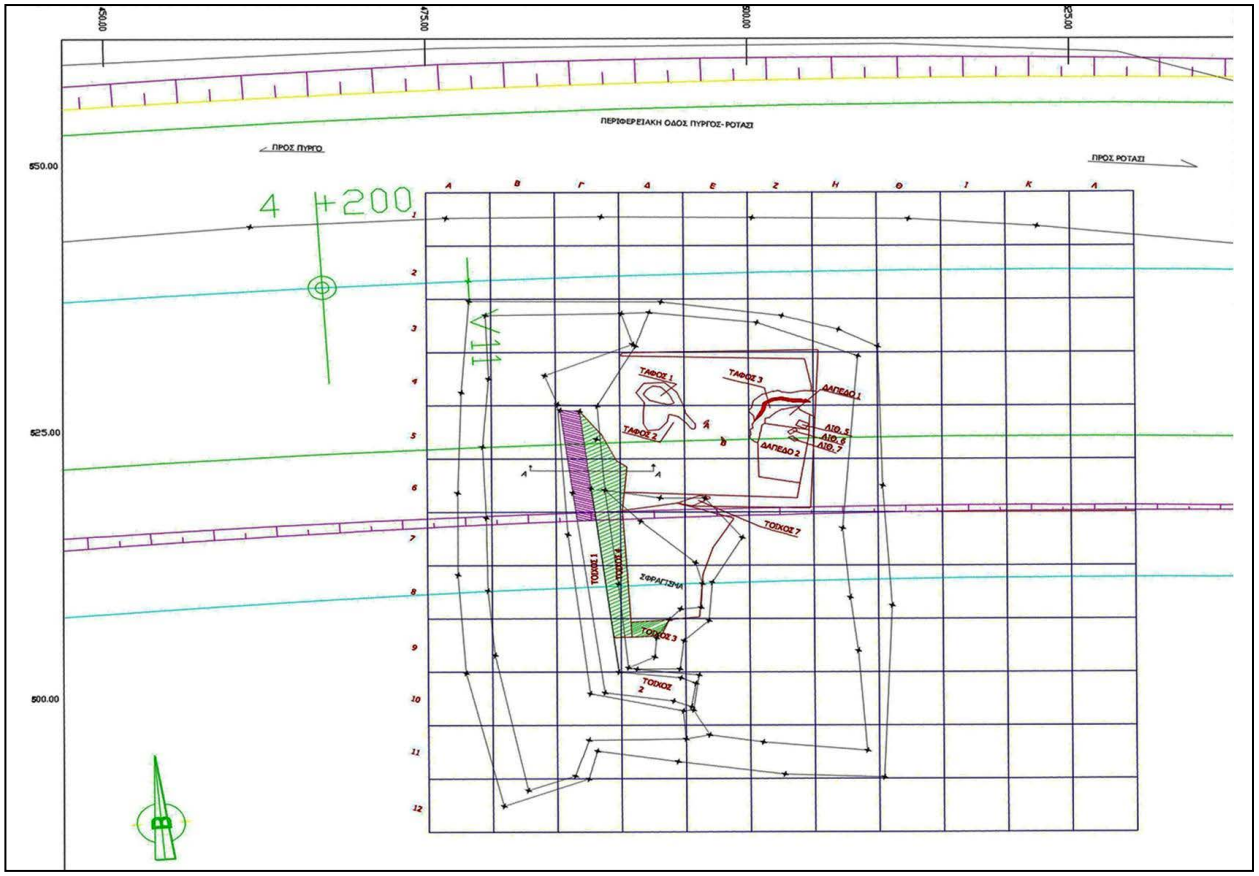
Γενικά, λοιπόν, φαίνεται ότι ο ορεινός όγκος των Αστερουσίων καταλαμβάνεται, διαχρονικά, από ένα πυκνό δίκτυο κεντρικών και δορυφορικών οικισμών, που, πιθανότατα, κατοικούνται από συγγενείς πληθυσμούς, σε ορεινές, ημιορεινές, πεδινές και παράκτιες θέσεις, που βρίσκονται σε άμεση γειτνίαση με περιοχές που ευνοούν τις ζωτικής σημασίας αγροτοκτηνοτροφικές δραστηριότητες. Στον βαθμό που είμαστε σε θέση να γνωρίζουμε, η εικόνα των ταφικών εθίμων και της οργάνωσης των νεκροταφείων τους φαίνεται να είναι μάλλον ομοιογενής, υποδεικνύοντας ίσως τις σχέσεις ομαλής συμβίωσης και καλής γειτονίας μεταξύ τους (Κακαμανούδης 2017: 396). Όλες οι θέσεις παρουσιάζουν κοινά χαρακτηριστικά, όπως η φυσική οχύρωση, η ύπαρξη ρεμάτων πηγών ή χειμάρρων σε κοντινή απόσταση και η δυνατότητα ελέγχου των περασμάτων και των διόδων επικοινωνίας με τους όμορους τους οικισμούς (Κακαμανούδης 2017: 396 και σημ. 1597).

Ταφικές πρακτικές στο αρχαίο Ρύτιο: σύνοψη των παλαιότερων ανασκαφικών δεδομένων

Πυρήνες της εκτεταμένης και σχεδόν γραμμικά οργανωμένης νεκρόπολης του Ρυτίου εντοπίζονται κατά μήκος των βορειότερων υπωρειών της Κεφάλας, που συμπίπτουν με τα νοτιότερα όρια της παρακείμενης πεδιάδας, από τη Φαρμακαρά και την Εμπασό στα δυτικά ως την Παναγία στον Ταμπαρά ανατολικά (**εικ. 6.6**, **6.7**). Κατά τη διάνοιξη δρόμου στη *Φαρμακαρά* αποκαλύφθηκε εκτεταμένο νεκροταφείο των γεωμετρικών χρόνων με καύσεις σε πίθους ανάλογες των Αρκάδων. Συλλέχθηκαν θραύσματα τεφροδόχων αγγείων, αρύβαλλοι, κύπελλα, σφονδύλια (Πλάτων 1955: 567; Ξιφαράς 2004: 172) και αρχαϊκή επιτύμβια στήλη στην οποία αναγράφεται το όνομα *Αρκεσίλας* (Πλάτων 1955: 567). Στον ίδιο χρονολογικό ορίζοντα εγγράφονται πέντε (5) θολωτοί τάφοι, τέσσερεις (4) μικρού και ένας (1) μεγάλου μεγέθους που εντοπίστηκαν, αντίστοιχα, στην *Εμπασό* και τον *Κάμπο* (Desborough 1995: 270–272, 429; Γκαλανάκη 1993: 466–467; Πλάτων 1954: 516; 1955: 567). Ο πρώτος από τους μικρούς θολωτούς διερευνήθηκε το 1954 από τον Ν. Πλάτωνα. Περιείχε τριάντα (30) πρωτογεωμετρικά αγγεία, έναν (1) πτηνόμορφο ασκό και δυο (2) γυναικεία ειδώλια με υψωμένα χέρια, κυλινδρικό κορμό και πτηνόμορφο πρόσωπο (Kanta and Karetsou 1998: 63, fig. D). Ο δεύτερος, 250 μ. νοτιοδυτικά του Ροτασίου, ανασκάφηκε το 1993 από την Κ. Γκαλανάκη (1993: 466, σχ. 12). Ήταν χτισμένος από πλακοειδείς λίθους μέσου μεγέθους και στο δάπεδό του υπήρχαν διάσπαρτα αγγεία, μικροαντικείμενα και σκελετικά υπολείμματα. Συλλέχθηκαν πέντε (5) θήλαστρα, τρεις (3) πρόχοι, τέσσερεις (4) κρατηρίσκοι, ένας (1) κρατήρας, ένα (1) μόνωτο κύπελλο, μία (1) υδρία, δύο (2) ομοιώματα τροχών, έντεκα (11) δισκοειδείς ψήφοι από φαγεντιανή και μία (1) πολύ οξειδωμένη χάλκινη πόρπη (Γκαλανάκη 1993: 466–467, πίν. 147γ). Δύο από τους μικρούς θολωτούς στην Εμπασό βρέθηκαν συληημένοι ενώ μαρτυρίες υποδεικνύουν την ύπαρξη ενός ακόμα όμοιου τάφου κάτω από την εκκλησία της Παναγίας στη θέση *Ταμπαράς* (Πλάτων 1948: 527).

Ο μεγάλος θολωτός στον *Κάμπο,* βορειοανατολικά του Ροτασίου και σε μικρή απόσταση από τους θολωτούς στην Εμπασό, ανασκάφηκε από τον Ν. Πλάτωνα το 1958. Βρέθηκε ασύλητος, με άθικτο το φράγμα της μνημειακής, προσανατολισμένης βόρεια – βορειοδυτικά, εισόδου (για διαστάσεις και περιγραφή βλ. Εγγλέζου 2013: 140 και σημ. 6) και όλα τα αγγεία που περιείχε ήταν στη θέση τους (Εγγλέζου 2013: 140). Ο τάφος διέθετε δρόμο και δάπεδο από λατύπες και ο θάλαμος είχε κατασκευαστεί κατά το εκφορικό σύστημα από επιμήκεις, στην πλειονότητά τους, λίθους δίχως συνδετικό υλικό (Εγγλέζου 2013: 140). Η κάτοψή του ήταν κυκλική με εσωτερική διάμετρο 1,70 μ. Η θέση των διακοσίων πενήντα (250) ακέραιων αγγείων που βρέθηκαν στον εσωτερικό του δεν ήταν συγκεκριμένη καθώς αυτά παραμερίζονταν συνεχώς προκειμένου να εξασφαλιστεί χώρος για τις επόμενες ταφές (Εγγλέζου 2013). Στο κέντρο του θαλάμου υπήρχε πήλινη ακόσμητη σαρκοφάγος ελλειψοειδούς σχήματος (Kanta and Karetsou 1998: 170). Με βάση τα τεφροδόχα αγγεία υπολογίζεται ότι οι καύσεις ήταν περίπου σαράντα (40). Εκτός από αγγεία, βρέθηκαν σιδερένια όπλα, περόνες, πόρπες, ασημένιες καρφίδες, χρυσοί ταινιωτοί δακτύλιοι και χρυσά διακοσμητικά ελάσματα (Εγγλέζου 2013: 141).

Στους πρώιμους ιστορικούς χρόνους ανάγονται και δύο κατεστραμμένες τοιχοδομές, σωζόμενου μήκους τριών (3) και οκτώ (8), αντίστοιχα, μέτρων, πιθανά υπολείμματα κτιστών περιφραγμάτων με μεμονωμένες πιθοταφές, όπως αυτά στην ανατολική (Παλαίκαστρο, Βρόκαστρο) και κεντρική (Πρινιάς Μαλεβιζίου, Φοινικιά Τεμένους) Κρήτη (Coldstream 1997: 370). Εντοπίστηκαν στις αρχές της δεκαετίας του 1970 κατά τη διάνοιξη τάφρου ύδρευσης στη βορειοανατολική παρειά της



Σχέδιο 6.1. Ο ανασκαφικός κάναβος στην Εμπασό.

Κεφάλας και διερευνήθηκαν από τον Στ. Αλεξίου με αφορμή την παράδοση ενός συνόλου των Ύστερων Γεωμετρικών - Πρώιμων Αρχαϊκών χρόνων, από δακτυλιόσχημα και άλλα αγγεία, δίσκο με αποτύπωμα «Δέντρου της Ζωής», ομοιώματα ταύρων, ψαριού και αλόγων. Κατά την ανασκαφή συλλέχθηκαν χάλκινη περόνη, πήλινο ομοίωμα αλόγου, πέντε (5) λοπάδια και δόντια μεγάλου ζώου, ενώ παρατηρήθηκαν ίχνη πυράς (Αλεξίου 1972: 492; 1972a: 622; Ξιφαράς 2004: 172).

Τέλος, το 2007–2008, στο πλαίσιο του έργου διαπλάτυνσης της υφιστάμενης οδού Πύργου - Ροτασίου, διερευνήθηκε στην *Εμπασό*, φυσικό, και κατ' όνομα, πέρασμα ανάμεσα στην *Κεφάλα* και τη *Φαρμακαρά*, εκτεταμένο τμήμα νεκρόπολης των Πρωτογεωμετρικών - Γεωμετρικών, Αρχαϊκών, Ελληνιστικών και Ρωμαϊκών χρόνων, που παρουσιάζεται στα κεφάλαια που ακολουθούν (**χάρτης 6.3, σχέδιο 6.1**).

Η νεκρόπολη στην Εμπασό

Ο αναλημματικός τοίχος των ιστορικών χρόνων

Το ανασκαμμένο τμήμα της νεκρόπολης οριζόταν νοτιοδυτικά από ανάλημμα σχήματος ανεστραμμένου Γ, ο δυτικός τοίχος του οποίου ήταν εν μέρει ορατός πριν από την έναρξη των ανασκαφικών εργασιών

Εικόνα 6.8. Ο δυτικός τοίχος του αναλήμματος από ΒΔ (Γ. Παπαδάκης-Πλουμίδης).

σε μήκος 8,50 μ. και ύψος 0,70 μ. (**εικ. 6.8**). Κατά τον καθαρισμό της δυτικής παρειάς του απομακρύνθηκαν, ως το βραχώδες φυσικό υπόστρωμα της περιοχής, πλούσιες φερτές, από το παρακείμενο προς δυσμάς ισχυρό ρέμα, αμμώδεις προσχώσεις μέσου πάχους 4,00 μ., που περιείχαν κροκαλοπαγείς και αργούς λίθους, διάφορα σύγχρονα αντικείμενα, αρκετά θραύσματα ασβεστοκονιάματος και ρωμαϊκών κεραμίδων, καθώς επίσης ελάχιστα, πολύ διαβρωμένα ελληνιστικά, ρωμαϊκά και υστερορωμαϊκά όστρακα.

Το ανάλημμα σχήματος Γ αποτελείται από δυο τοιχοδομές μέγιστου πάχους 1 μ. και μέσου ύψους 2,50 μ. που τέμνονται στα νοτιοδυτικά σχηματίζοντας αμβλεία γωνία. Οι εξωτερικές παρειές τους συνίστανται σε καλοεργασμένους ορθογώνιους λίθους σε αντίθεση με τις αντίστοιχες εσωτερικές που είναι κατασκευασμένες από πρόχειρη αργολιθοδομή, με χώμα ως συνδετικό υλικό στην αρχική φάση χρήσης. Ο δυτικός τοίχος, στον άξονα βορρά - νότου, έχει μέγιστο σωζόμενο μήκος 11 μ.,[3] ενώ ο νότιος, που διατηρείται ακέραιος, εκτείνεται σε μήκος 2,80 μ. από βορειοδυτικά προς νοτιοανατολικά. Το ανατολικό μέτωπο του τελευταίου έχει, επιπλέον, ενισχυθεί με δύο ξεστούς πωρολιθικούς δόμους, τοποθετημένους σε κατακόρυφη διάταξη, εν είδει παραστάδας.

Σημειώνεται εξαρχής η ιδιαίτερη θέση που κατέχει ο συγκεκριμένος αναλημματικός τοίχος ανάμεσα στις μέχρι στιγμής γνωστές αρχαιολογικές του συνάφειες τόσο εντός όσο και εκτός Κρήτης. Καταρχήν είναι σχεδόν βέβαιο πως ορίζει τη νεκρόπολη μόνο από νοτιοδυτικά, καθώς, παρά την επισταμένη διερεύνηση του χώρου, δε στάθηκε εφικτό να εντοπιστεί το προς ανατολάς πάρισον τμήμα του ή έστω ίχνη της τάφρου θεμελίωσής του. Γι' αυτό και ο νότιος τοίχος με την πωρολιθική, στραμμένη ανατολικά, εν είδει παραστάδας, απόληξη, ίσως, λειτουργούσε και ως αντηρίδα στον επιμήκη δυτικό τοίχο, με τον οποίο, εξάλλου, ενδεχομένως για λόγους στατικούς, μάλλον σκόπιμα δε σχηματίζουν ορθή γωνία, όπως θα ήταν αναμενόμενο με βάση το ομαλό φυσικό ανάγλυφο της περιοχής, όπου εκτείνεται η νεκρόπολη. Τα δεδομένα αυτά εγείρουν σημαντικά ερωτήματα αναφορικά με την λειτουργία του αναλήμματος κατά τη διάρκεια της χρήσης του χώρου ως νεκροταφείου. Οι πρώτες σκέψεις στρέφονται στις τοπ(ι)ογραφικές ιδιαιτερότητες του συγκεκριμένου σημείου, που βρίσκεται στις χαμηλές υπώρειες της ακρόπολης στην Κεφάλα και στην ανατολική κοίτη ενός ισχυρού παραπόταμου του Αναποδάρη, που οι γηραιότεροι Ροτασανοί θυμούνται να πλημμυρίζει συνεχώς μέχρι τους νεώτερους χρόνους.[4] Ο ίδιος αυτός παραπόταμος συνιστά ένα σαφές φυσικό όριο ανάμεσα στις νεκροπόλεις Εμπασού και Φαρμακαρά που βρίσκεται ακριβώς ανατολικά. Συνεπώς, δεν αποκλείεται την κατασκευή ενός ψηλού και ισχυρού αναλήμματος στα νοτιοδυτικά όρια της νεκρόπολης να επέβαλε η ανάγκη προστασίας των ταφών από τις προσχώσεις και τα επάλληλα πλημμυρικά επεισόδια που προκαλούσε η υπερχείλιση του παρακείμενου ρέματος.

Η κύρια φάση λειτουργίας του αναλημματικού τοίχου τοποθετείται στην Ελληνιστική περίοδο, αφού στην λαξευτή, στον φυσικό βράχο, στενεπιμήκη τάφρο θεμελίωσής του, βρέθηκαν πακτωμένοι αργοί λίθοι, θύλακες φερτού συμπιλητού μαργαϊκού ασβεστόλιθου, ελάχιστα θραυσμένα ανθρώπινα οστά και λίγα λεπτότεχνα μελαμβαφή ελληνιστικά όστρακα. Πιθανή όσο και εύλογη, ωστόσο, θεωρείται η ύπαρξη ενός αρχικού αρχιτεκτονικού πυρήνα του αναλήμματος ήδη στους πρωτογεωμετρικούς - γεωμετρικούς χρόνους, εφόσον σχεδόν σε επαφή με την εσωτερική του γωνία, στο επίπεδο της θεμελίωσης, παρέμειναν αδιατάρακτοι, κατά τους ελληνιστικούς χρόνους, οι προϋπάρχοντες γεωμετρικοί εγχυτρισμοί, η κατά χώραν διατήρηση των οποίων, ενδεχομένως, επέβαλε περαιτέρω την απόκλιση του νότιου τοίχου του αναλήμματος σε σχέση με τον δυτικό και τον σχηματισμό αμβλείας, αντί ορθής, γωνίας στο σημείο επαφής τους.

Εικόνα 6.9. Άποψη της ΥΡ δεξαμενής από Α (Χ. Παπαδάκη).

Το ύψος του δυτικού τοίχου του αναλήμματος πλησιάζει σε σημεία τα 3,20 μ. καθώς σε τμήμα της ανωδομής του εδράζεται ο δυτικός τοίχος πιθανόν υστερορωμαϊκής δεξαμενής (**εικ. 6.9**), από την οποία σώζονται η νοτιοδυτική γωνία, σε απόσταση 1,50 μ. από την εσωτερική γωνία του αναλήμματος, καθώς και τμήμα του πυθμένα. Οι τοιχοδομές της, μέσου πλάτους 0,60 μ., είναι θεμελιωμένες περίπου 2,00 μ. ψηλότερα από την τάφρο θεμελίωσης του αναλήμματος. Αποτελούνται από αργούς λίθους όλων των μεγεθών με παχύ υδραυλικό ασβεστοκονίαμα ως συνδετικό υλικό. Το μέγιστο σωζόμενο μήκος της νότιας πλησιάζει τα 2,00 μ. και αυτό της εφαπτόμενης, σε τμήμα του αναλήμματος δυτικής, τα 8,56 μ. Το σωζόμενο τμήμα του πυθμένα, από ασβεστοκονίαμα και άφθονα, καλά πακτωμένα, χωρίς σαφή διάταξη και προσανατολισμό λιθάρια, εκτείνεται σε μήκος 4,33 μ. στον άξονα βορρά - νότου και 3,45 μ. από ανατολικά προς δυτικά. Κατά τον καθαρισμό του αφαιρέθηκαν παχιές αμμώδεις προσχώσεις που εμπεριείχαν τμήματα λεκανίδας και πρόχου των

[3] Καθαιρέθηκαν, έπειτα από απόφαση του Τοπικού Συμβουλίου Κρήτης, δύο μέτρα για τις ανάγκες διαπλάτυνσης της επαρχιακής Πύργος - Ροτάσι.

[4] Η ευρύτερη περιοχή της Εμπασού έχει υποστεί επάλληλα πλημμυρικά επεισόδια με πιο πρόσφατο, σύμφωνα με προφορικές μαρτυρίες που καταγράφηκαν κατά τη διάρκεια της ανασκαφής, αυτό της 11ης Σεπτέμβρη 1977.

μεσομινωικών χρόνων, τοιχώματα ελληνιστικών αγγείων, θραύσμα πινακίου τύπου terra sigillata, τοίχωμα υστερορωμαϊκού αμφορέα τύπου Peacock 43, όστρακα υστερορωμαϊκών ερυθρεπίχριστων πινακίων, λίγα ανθρώπινα οστά, πυριτολιθική φολίδα βολόσυρου και θραύσμα σύγχρονου γυαλιού.

Ο πυθμένας της δεξαμενής εδράζεται σε χαλαρή επίχωση κροκαλοπαγών και λατυποπαγών λίθων όλων των μεγεθών, μέσου πάχους 1,70 μ., που δεν απέδωσε ευρήματα. Σύμφωνα με τη μέχρι στιγμής μελέτη των ανασκαφικών δεδομένων, η κατασκευή της δεξαμενής τοποθετείται αμέσως μετά από τον σεισμό του 365 μ.Χ., όπως μαρτυρούν η κεραμεική και χάλκινο νόμισμα του Βάλεντα,[5] η κοπή του οποίου ανάγεται στο χρονικό διάστημα 367 - 375 μ.Χ. Η διαφορετική αυτή, ωστόσο βραχύβια καθώς φαίνεται, επαναχρησιμοποίηση του χώρου της αρχαίας νεκρόπολης του Ρυτίου, εγγράφεται στην γενικότερη εικόνα κατάρρευσης και σχεδόν ταυτόχρονης παρακμής των αρχαίων κρητικών πόλεων μετά τον σεισμό του 365 μ.Χ., οπόταν παρατηρούνται αλλαγές στις χρήσεις των χώρων με έμφαση στην επαναχρησιμοποίηση ήδη έτοιμων αρχιτεκτονικών δομών, όπως είναι, στην προκειμένη περίπτωση, ο αναλημματικός τοίχος της νεκρόπολης. Στο πλαίσιο αυτό τοποθετείται σειρά μετασκευών που συνοψίζονται:

1) Στην αρμολόγηση των τοιχοδομών του ελληνιστικού αναλήμματος κυρίως εξωτερικά και έως τις πρώτες σειρές δόμων των εσωτερικών παρειών του, σε συνολικό ύψος 0,80 μ., με άφθονα μικρά εμβαλωματικά λιθάρια και το ίδιο παχύ ασβεστοκονίαμα που είχε χρησιμοποιηθεί για την κατασκευή του πυθμένα της υστερορωμαϊκής δεξαμενής.

2) Στη «σφράγιση» της προς βορρά κατεστραμμένης συνέχειας του δυτικού τοίχου του και της τάφρου θεμελίωσής του με ασβεστοκονίαμα.

3) Στην επικάλυψη με παχιά στρώση από το ίδιο κονίαμα συγκεκριμένων περιοχών της νεκρόπολης που εντοπίζονται κυρίως ανάμεσα στην υστερορωμαϊκή δεξαμενή και τον αναλημματικό τοίχο καθώς και εξωτερικά του τελευταίου, όπου διερευνήθηκε συμπαγής επιφάνεια από ασβεστοκονίαμα και καλά πακτωμένα λιθάρια, μέγιστων σωζόμενων διαστάσεων 1,70 μ. (Β. - Ν.) Χ 1,27 μ. (Α. - Δ.), κάτω από την οποία υπήρχε χαλαρή επίχωση μέσου πάχους 2,00 μ., από αργούς λίθους μεγάλου μεγέθους και μη οριοθετημένες απορρίψεις ανθρώπινων οστών, ελληνιστικών κεραμίδων και κεραμεικής, καθώς επίσης άτακτη συγκέντρωση από μεσομινωικά ΙΙ - ΙΙΙ αγγεία και λίθινα εργαλεία. Υπογραμμίζεται εδώ, η παρουσία της μινωικής κεραμεικής που, μολονότι αποκομμένη από το αρχικό της περιβάλλον, τεκμηριώνει την πρωιμότερη χρήση του χώρου της νεκρόπολης, τον χαρακτήρα της οποίας αναμένεται να διαφωτίσει η περαιτέρω μελέτη του υλικού.

Στο εξής ο χώρος εγκαταλείπεται και επικαλύπτεται σταδιακά από παχιές προσχώσεις, προερχόμενες, κυρίως, από το παρακείμενο ρέμα, γεγονός που επέτρεψε την χρήση του χώρου ως αγροτεμαχίου κατά τους νεώτερους χρόνους.

Η Πρωτογεωμετρική – Γεωμετρική και Αρχαϊκή φάση της νεκρόπολης

Από την Πρωτογεωμετρική - Γεωμετρική φάση της νεκρόπολης διατηρήθηκαν πέντε συνολικά καύσεις.[6] Τρεις βρέθηκαν στο νοτιοδυτικό - νότιο όριό της, μέσα σε αβαθή ορύγματα καλυμμένα με τυμβοειδή εξάρματα φερτού συμπιλητού μαργαϊκού ασβεστόλιθου και δύο είχαν τοποθετηθεί σε ισάριθμους κτιστούς ψευδοθολωτούς στο βορειοδυτικό όριο του ανασκαμμένου τμήματός της. Αναλυτικότερα:

Κάτω από την παχιά στρώση συμπαγούς ασβεστοκονιάματος που, όπως αναφέρθηκε παραπάνω, επικάλυψε κατά τους υστερορωμαϊκούς χρόνους την περιοχή ανάμεσα στη γωνία του ελληνιστικού αναλήμματος και τον νότιο τοίχο της υστερορωμαϊκής δεξαμενής, υπήρχε αμμώδης επίχωση με πλήθος αργών λίθων και λίγα ελληνιστικά και ρωμαϊκά - υστερορωμαϊκά όστρακα. Σε βάθος 1,60 μ. από την ανωδομή του αναλημματικού και έως το σταθερό έδαφος αποκαλύφθηκε τυμβοειδές έξαρμα από σκληρό φερτό μαργαϊκό ασβεστόλιθο, ελάχιστη άμμο και λατύπες, που κάλυπτε οριοθετημένη με αργούς λίθους συγκέντρωση από κλειστά, ίσως σκόπιμα θραυσμένα, λεπτότεχνα γεωμετρικά αγγεία, έντονα ίχνη πυράς, άφθονα υπολείμματα ανθράκων, λίγα καμένα ανθρώπινα λείψανα και δίωτο τεφροδόχο γεωμετρικό αγγείο που είχε στερεωθεί με λατύπες σε λεπτή στρώση φερτού μαργαϊκού ασβεστόλιθου, με τις οριζόντιες, σε σχήμα βουκρανίου λαβές στραμμένες νοτιοανατολικά - βορειοδυτικά. Στο ίδιο επίπεδο, μόλις 0,20 - 0,40 μ. από τον νότιο και 0,44 - 0,65 μ. από τον δυτικό τοίχο του ελληνιστικού αναλήμματος, εντοπίστηκε ένα ακόμη γεωμετρικό τεφροδόχο αγγείο με πήλινο πώμα, επίσης καλυμμένο με χώμα και καλά πακτωμένο σε στρώση φερτού μαργαϊκού ασβεστόλιθου στον άξονα νότου - βορρά (**εικ. 6.10**). Έξι περίπου μέτρα νοτιοανατολικά, στα ίδια βάθη, κείτονταν ένα Πρωτογεωμετρικό Β

[5] Νομισματοκοπείου Ακηλυίας, πρώτου εργαστήριου (officina) (**Εικ. 6.19** στ) βλ. *RIC* IX, σ. 96,11b.

[6] Coldstream 1997: 368–369. Διάσπαρτη κεραμεική της συγκεκριμένης χρονικής περιόδου, προφανώς από κατεστραμμένες ταφές, συλλέχθηκε σε όλη σχεδόν την έκταση του ανασκαμμένου τμήματος της νεκρόπολης.

Εικόνα 6.10. Γεωμετρική πιθοταφή (Χ. Παπαδάκη).

Εικόνα 6.11. Ψευδοθολωτός με πιθοταφή (Χ. Παπαδάκη).

Εικόνα 6.12. Τμήμα θολωτού τάφου από Α (Χ. Παπαδάκη).

Εικόνα 6.13. Επιτύμβιες στήλες στην επίχωση του θολωτού της εικόνας 12. Η μεσαία από αυτές ενεπίγραφή (Χ. Παπαδάκη).

δίωτο τεφροδόχο, όμοιου προσανατολισμού με το προηγούμενο, με επίπεδη βάση, ψηλό κυλινδρικό σώμα και ακανόνιστο πλακοειδή λίθο, ως πώμα, στο στόμιό του.[7]

Δύο ακόμη καύσεις εντοπίστηκαν στο βορειοδυτικό όριο του ανασκαμμένου τμήματος της νεκρόπολης. Οι καύσεις αυτές είχαν τοποθετηθεί σε ισάριθμους αντίνωτους ψευδοθολωτούς που κατασκευάστηκαν από αργούς λίθους όλων των μεγεθών με προσανατολισμό βορειοδυτικά - νοτιοανατολικά. Είχαν επικαλυφθεί με φερτές αμμώδεις προσχώσεις που περιείχαν θύλακες μαργαϊκού ασβεστόλιθου, αργούς λίθους όλων των μεγεθών, σκόρπια ανθρώπινα λείψανα, ακέραιο ελληνιστικό λύχνο και λίγα γεωμετρικά, ελληνιστικά, και ρωμαϊκά-υστερορωμαϊκά όστρακα. Στον βορειοδυτικό ψευδοθολωτό είχε τοποθετηθεί τεφροδόχος πίθος με τον επίπεδο πυθμένα στραμμένο βορειοδυτικά και το καλυμμένο με αργό λίθο στόμιό του νοτιοανατολικά. Λατύπες συγκρατούσαν το απιόσχημο σώμα του στο φυσικό βραχώδες υπόστρωμα. Το αγγείο περιείχε λίγα υπολείμματα καύσης και βότσαλα. Ακριβώς βορειοδυτικά αποκαλύφθηκε συγκέντρωση πεσμένων, προφανώς από την ανωδομή του τάφου, αργών λίθων. Στον νοτιοανατολικό ψευδοθολωτό είχε ενσφηνωθεί ένας τετράωτος ωοειδής πίθος (**εικ. 6.11**). Στο στραμμένο βορειοδυτικά στόμιό του είχε τοποθετηθεί λίθινο λαξευτό πώμα ενώ το μεγαλύτερο μέρος του σώματός του είχε επικαλύψει μεγάλος αργός λίθος με μία κεντρική και έξι περιφερικές αβαθείς κοιλότητες στον τύπο των μινωικών κέρνων πανσπερμίας. Οι συγκεκριμένοι ψευδοθολωτοί χρονολογούνται, σύμφωνα με την κεραμεική, πριν από τον 7ο αιώνα π.Χ.

Λίγα μόλις μέτρα ανατολικά των ψευδοθολωτών αποκαλύφθηκε το βόρειο τμήμα κατεστραμμένου θολωτού με δύο επάλληλα δάπεδα από φερτή συμπιλητή γη, σε σημεία των οποίων εντοπίστηκαν ίχνη πυράς και υπολείμματα ανθράκων (**εικ. 6.12**). Ακριβώς ανατολικά εκτεινόταν τμήμα χτιστού αγωγού

[7] Σύμφωνα με τον συνάδελφο Αντώνη Κοτσώνα το αγγείο έχει ακριβή παράλληλα στην κεραμεική της Κνωσού και της Επισκοπής Πεδιάδος.

με αντίστοιχο δάπεδο ελαφρά καμπυλούμενης φοράς, μάλλον υστερορωμαϊκών χρόνων όπως και η δυτικά σε σχέση με αυτόν δεξαμενή, που κατέστρεψε το νότιο τμήμα του θολωτού. Ο τάφος είχε καλυφτεί με αμμώδη επίχωση που περιείχε κατάλοιπα κατεστραμμένων ελληνιστικών ταφών, όπως άφθονα σκελετικά υπολείμματα, θραύσματα κεραμίδων, όστρακα, τμήμα λύχνου και αμφικωνικό σφονδύλι. Από το εσωτερικό του αφαιρέθηκε ανάμικτη, αλλά ενιαία απορριμματική εναπόθεση, μέσου πάχους 0,70 μ., με διάσπαρτα ανθρώπινα λείψανα, άφθονα υπολείμματα ανθράκων, λίγα οστά ζώων, αρκετά δόντια κάπρων, δύο αρχαϊκές επιτύμβιες στήλες με μη εικονιστική διακόσμηση χαμηλού αναγλύφου, μία επιτύμβια στήλη με τη μονόστιχη επιγραφή ΣΤΑΣΙΟΣ ΕΜΙ, των αρχών του 6ου αι. π.Χ.,[8] και κεραμεική των μινωικών, γεωμετρικών, αρχαϊκών και ελληνιστικών χρόνων (**εικ. 6.13**). Αξίζει να σημειωθεί ότι ακριβώς ανατολικά του θολωτού, συλλέχθηκαν αρκετά θραύσματα ανάγλυφων πίθων του 6ου αι. π.Χ. που βρέθηκαν μαζί με κατάλοιπα αναμοχλευμένων ελληνιστικών ταφών. Τα συγκεκριμένα ευρήματα εγγράφονται στον ίδιο χρονολογικό ορίζοντα με την επιτύμβια, *επί τα λαιά* επιγραφή, με χαραγμένο στον παραλληλεπίπεδο λίθο της το όνομα ΑΡΚΕΣΙΛΑΣ, που συλλέχθηκε από τον Ν. Πλάτωνα πριν από έξι περίπου δεκαετίες στην Εμπασό (Πλάτων 1955: 567). Πρόκειται, προφανώς, για ταφικά σήματα τοποθετημένα στους κατεστραμμένους πλέον τάφους των νεκρών που έφεραν εν ζωή τα ονόματα *Στάσιος* και *Αρκεσίλας*, αποτελώντας ταυτόχρονα μαρτυρίες για τη χρήση της νεκρόπολης και κατά τους χρόνους αυτούς.

Η Ελληνιστική - Ρωμαϊκή φάση της νεκρόπολης

Η συγκεκριμένη φάση περιλαμβάνει δεκατρείς μεμονωμένες, ελεύθερες στον χώρο, καλυμμένες με φερτή συμπιλητή γη ταφές, τρεις καύσεις σε υδρίες τύπου Hadra και οκτώ λακκοειδείς κεραμοσκεπείς τάφους, οι περισσότεροι από τους οποίους βρέθηκαν πολύ κατεστραμμένοι.

Οι δεκατρείς ελεύθερες στον χώρο ταφές ενηλίκων εντοπίστηκαν στο δυτικό (1) και κυρίως στο ανατολικό (12) τμήμα της νεκρόπολης. Η ταφή στο δυτικό της τμήμα εκτεινόταν σε λεπτή στρώση φερτού μαργαϊκού ασβεστόλιθου με προσανατολισμό στον άξονα δύσης - ανατολής. Ανατολικά, σε επαφή με τα κατεστραμμένα σκελετικά της κατάλοιπα είχε τοποθετηθεί ένα άβαφο κύπελλο. Στις περισσότερες πάντως από τις ελεύθερες στον χώρο ταφές του ανατολικού τμήματος της νεκρόπολης ο σκελετός βρέθηκε σε σχετικά καλή κατάσταση διατήρησης. Οι ταφές αυτές δεν είχαν συγκεκριμένο προσανατολισμό, πιθανόν για οικονομία χώρου, ενώ το κρανίο και τα συνοδευτικά τους αγγεία είχαν στερεωθεί με λατύπες είτε απευθείας στο φυσικό βραχώδες υπόστρωμα είτε σε στρώση όμοιου με τις παραπάνω φερτού χώματος. Μία από τις ταφές πραγματοποιήθηκε σε ωοειδές λιθοπερίκλειστο λάξευμα. Οι περισσότεροι σκελετοί βρέθηκαν σε ύπτια θέση με τα χέρια παράλληλα και σε επαφή με το σώμα, ενώ σε δύο περιπτώσεις ακουμπούσαν στο στέρνο και σε μία τα κάτω άκρα τέμνονταν χιαστί. Αποκαλύφθηκαν επίσης μεμονωμένος σκελετός σε συνεσταλμένη - εμβρυακή θέση και μία διπλή ταφή με διαταραγμένα σκελετικά κατάλοιπα. Τα κτερίσματα των συγκεκριμένων ταφών ήταν ελάχιστα. Συλλέχθηκαν τέσσερα χάλκινα νομίσματα, λίγα πήλινα μικροαντικείμενα, μια χάλκινη εφηλίδα και τέσσερα σιδερένια άγκιστρα τετράπλευρης διατομής. Τα αγγεία (αμφορείς, υδρίες, οινοχόες, κύπελλα) που τις συνόδευαν βρίσκονταν, συνήθως, σε επαφή με το σώμα και κυρίως τα πόδια.

Οι τρεις καύσεις σε ισάριθμες υδρίες τύπου Hadra (Εγγλέζου 2000: 404–411) εντοπίστηκαν στο βορειοδυτικό τμήμα της νεκρόπολης, ίσως όχι τυχαία, ανάμεσα σε αυτές της Πρωτογεωμετρικής - Γεωμετρικής φάσης. Μία από αυτές είχε πακτωθεί σε κυκλικό λιθοπερίκλειστο όρυγμα διαμέτρου 0,33 μ. και συνοδευόταν από ακόσμητη οινοχόη. Το στόμιο της υδρίας είχε τοποθετηθεί σε θέση χρήσης και ήταν καλυμμένο με πλακοειδή λίθο. Εξίσου ενδιαφέρουσα είναι και η δεύτερη από τις καύσεις που εντοπίστηκε πακτωμένη με λατύπες σε στρώση από φερτό μαργαϊκό ασβεστόλιθο ακριβώς βορειοανατολικά της προηγούμενης και συνοδευόταν από μία λήκυθο με μικρό πλακοειδή λίθο, εν είδει πώματος, στο στόμιό της και ένα βαλσαμάριο.

Στο νότιο τμήμα του νεκροταφείου αποκαλύφθηκαν σκόρπια υπολείμματα κατεστραμμένων ελληνιστικών ταφών και δύο καλυβίτες. Ο πρώτος, διαστάσεων 2,30 (Α - Δ) Χ 1,02 (Β - Ν), εκτεινόταν ακριβώς νοτιοανατολικά των γεωμετρικών εγχυτρισμών στη νοτιοδυτική γωνία του ελληνιστικού αναλήμματος. Οριζόταν στις στενές του πλευρές, βορειοδυτικά και νοτιοδυτικά, από μία, αντίστοιχα, κατακόρυφα τοποθετημένη ορθογώνια κεραμίδα, ενώ επικαλυπτόταν από στρώση θραυσμένων κεραμίδων που σχημάτιζαν χαμηλό τύμβο. Πρόκειται για τον πιο φροντισμένο ελληνιστικό - ρωμαϊκό κεραμοσκεπή τάφο πράγμα που επιβεβαιώνεται και από το σχετικά πλούσιο περιεχόμενό του. Το τελευταίο συνίσταται σε λίγα μελαμβαφή όστρακα, αργυρό τριόβωλο Άργους, ενδεχομένως κειμηλιακού χαρακτήρα, και δέκα γυάλινα μυροδοχεία με ατρακτοειδές ή σφαιρικό σώμα και ψηλό κυλινδρικό λαιμό του 1ου αι. μ.Χ. που βρέθηκαν πακτωμένα στο σκληρό υπόστρωμα μαργαϊκού ασβεστόλιθου. Τα σκελετικά υπολείμματα σώζονταν σε εξαιρετικά άσχημη κατάσταση διατήρησης. Ένας δεύτερος πρωιμότερος, των αρχών του 1ου αι. π.Χ., κατεστραμμένος καλυβίτης βρέθηκε ακριβώς ανατολικά του προηγούμενου. Από το εσωτερικό του συλλέχθηκαν λίγα ανθρώπινα οστά, μία μολύβδινη κυλινδρική πυξίδα, ένα άβαφο βαλσαμάριο,

[8] Ευχαριστούμε θερμά τον Χαράλαμπο Κριτζά για την βοήθειά του στην μεταγραφή και χρονολόγηση της επιγραφής.

και ένα ακέραιο γυάλινο αλεξανδρινό αλάβαστρο με διακόσμηση φτερού ("feather pattern").

Στο ανατολικό τμήμα της νεκρόπολης εντοπίστηκε συστάδα από έξι καλυβίτες, προσανατολισμένους από νοτιοανατολικά προς βορειοδυτικά. Τόσο οι κεραμίδες όσο και τα κτερίσματα είχαν πακτωθεί στο βραχώδες φυσικό υπόστρωμα, δυσχεραίνοντας την απόσπασή τους από το έδαφος. Τα σκελετικά υπολείμματα βρέθηκαν σε εξαιρετικά άσχημη κατάσταση διατήρησης ενώ σε κάποιες περιπτώσεις παρατηρήθηκε η απόθεση του κρανίου σε πλακοειδή λίθο εν είδει προσκέφαλου (Δαβάρας 1985, 209). Στα κτερίσματα συγκαταλέγονται θραύσματα από μελαμβαφή αγγεία (αρυβαλλοειδή ληκύθια, οινοχόες), γυάλινα μυροδοχεία, οστέινη ψιμμυθιοθήκη με ανάγλυφους περιφερικούς δακτυλίους στο κυλινδρικό σώμα, οστέινη περόνη, νομίσματα,[9] αργυρό ενώτιο και κωνικό σφονδύλι από υαλόμαζα του 1ου αι. μ.Χ.

Γενικές παρατηρήσεις

Στην περιοχή του αρχαίου Ρυτίου διαπιστώνεται, καταρχήν, ο σαφής διαχωρισμός των περιοχών κατοίκησης και ταφής, σε μικρή, ωστόσο, απόσταση μεταξύ τους, γεγονός που συνιστά πάγια αρχή της οργάνωσης του χώρου στον ελληνικό κόσμο (Flämig 2007). Η χωροθέτηση της νεκρόπολης στην Εμπασό τοποθετείται σε χαμηλότερο και σαφώς ομαλότερο επίπεδο σε σχέση με τον όμορο οικισμό, που αναπτύσσεται στις τειχισμένες ακροπόλεις των παρακείμενων, προς νότια, λόφων. Περαιτέρω, ο χώρος του νεκροταφείου, ορίζεται, τουλάχιστον δυτικά, από έναν μνημειώδη τοίχο με αναλημματικό, ενδεχομένως, χαρακτήρα, ο οποίος δεν αποκλείεται να αποτελούσε τμήμα κάποιου οικοδομικού προγράμματος, στο πλαίσιο ενίσχυσης της οχύρωσης του οικισμού κατά τους ελληνιστικούς και ρωμαϊκούς χρόνους. Μολονότι η χρονική κατάταξη των ταφικών περιβόλων δεν είναι πάντοτε εφικτή, υπάρχουν στοιχεία ύπαρξης τέτοιων κατασκευών στην Κνωσό, στη Βιάννο και στην Ίνατο μεταξύ του 2ου και 3ου αι. μ.Χ. (Αναγνωστάκη 2010: 101 και σημ. 527) ενώ στον ελλαδικό χώρο η ανέγερση περιβόλων φαίνεται να γνωρίζει ευρεία διάδοση κατά τον 2ο αι. μ.Χ. (Αναγνωστάκη 2010: 101 και σημ. 527). Προφανώς, ο περίβολος στην Εμπασό συμπεριέλαβε τις προϋπάρχουσες ταφές των γεωμετρικών χρόνων, όχι, όμως, και αυτές των μινωικών που, ως αρχαιότερες, παραμερίστηκαν άτακτα και καταστράφηκαν. Επισημαίνεται ότι, οι γεωμετρικές ταφές στην Εμπασό, συσχετίζονται με τα διάσπαρτα στην ευρύτερη περιοχή, σύγχρονά τους ταφικά μνημεία, η παρουσία των οποίων, ίσως, συνδέεται με την κατά κώμας οργάνωση του χώρου κατά τους χρόνους αυτούς. Εξυπακούεται ότι, νεκροπόλεις, όπως αυτή στην Εμπασό, που χρησιμοποιούνται εντατικά για μεγάλο χρονικό διάστημα, πιθανότατα συνδέονται με περισσότερους του ενός οικισμούς ή ίσως ακόμη και κοινωνικές ομάδες που δραστηριοποιούνται στην ευρύτερη περιοχή. Φυσικά, για την διασαφήνιση των ζητημάτων αυτών απαιτείται η όσο το δυνατόν πληρέστερη διερεύνηση των ταφικών και οικιστικών συνόλων και φυσικά η λεπτομερής δημοσίευσή τους.

Η έκταση της υπό εξέταση νεκρόπολης, δεδομένου ότι έχει ανασκαφεί μικρό μόνο μέρος της, παραμένει άγνωστη και δύσκολα θα μπορούσε να εκτιμηθεί με ακρίβεια. Δεδομένο φαίνεται να είναι, ωστόσο, το προς δυσμάς όριό της, και μάλιστα καθόλη τη διάρκεια της χρήσης της, από την Γεωμετρική έως και την Ρωμαϊκή περίοδο, λόγω της παρουσίας του αναλήμματος και του παρακείμενου χειμάρρου, που αποτελεί φυσικό όριο από αυτά που σηματοδοτούν συχνά τη χωροθέτηση κρητικών, και όχι μόνο, νεκροπόλεων σε θέσεις άγονες, με αμμώδεις προσχώσεις, που δεν προσφέρονταν για καλλιέργεια (Κακαμανούδης 2017: 425). Παραμένει, βεβαίως, άγνωστο εάν η νεκρόπολη είχε οριοθετηθεί με κτιστό περίβολο στα βόρεια και στα ανατολικά, ωστόσο, κάτι τέτοιο δεν διαπιστώθηκε κατά την σύντομη διερεύνησή της. Η προσθήκη τοιχοδομής στα νότια του αναλήμματος, που μάλιστα ενισχύεται στο ανατολικό της μέτωπο με ξεστούς δόμους εν είδει παραστάδας, ίσως υποδηλώνει την πιθανή διαμόρφωση κάποιας πρόσβασης και δη σε άμεση οπτική επαφή και γειτνίαση με το παρακείμενο τμήμα του οικισμού στην Κεφάλα.

Όσον αφορά στον προσανατολισμό των ταφών, φαίνεται πως το εκτεταμένο και ιδιαιτέρως ομαλό φυσικό ανάγλυφο της νεκρόπολης, κάθε άλλο παρά επέβαλε τη συστηματική εφαρμογή αυστηρών κανόνων ως προς το συγκεκριμένο ζήτημα, πιθανόν για λόγους οικονομίας χώρου που δυσχέραινε περαιτέρω η πυκνή παρουσία και των παλαιότερων ταφών κυρίως στο δυτικό και νότιο τμήμα της νεκρόπολης. Το φαινόμενο αυτό παρατηρείται σε αρκετά νεκροταφεία της ηπειρωτικής Ελλάδας (Κακαμανούδης 2017: 407), ωστόσο, δεν είναι συχνό στις κρητικές νεκροπόλεις των ελληνιστικών και ρωμαϊκών χρόνων, όπου παρατηρείται συνέπεια και σαφής διάταξη των τάφων προς μία συγκεκριμένη κατεύθυνση (Αναγνωστάκη 2010: 96). Γενικά, εξαιρουμένου του περιβόλου στα δυτικά όριά της, στην νεκρόπολη της Εμπασού δεν παρατηρείται καμία άλλη προσπάθεια χωροταξικής οργάνωσης και εξωραϊσμού της.

Κυρίαρχη ταφική πρακτική στη Γεωμετρική και πιθανόν στην Αρχαϊκή περίοδο είναι αυτή των δευτερογενών καύσεων σε τεφροδόχα αγγεία πακτωμένα σε κτιστές κατασκευές. Στους ελληνιστικούς χρόνους δευτερογενείς καύσεις, που συνυπάρχουν με ενταφιασμούς, εντοπίζονται στο εσωτερικό μελανόγραφων υδριών τύπου Hadra, το

[9] Καλύτερα διατηρημένο το χάλκινο ασσάριο του Κοινού των Κρητών στο όνομα του Βεσπασιανού (**Εικ. 6.19ε**) κοπής 77 μ.Χ. Svoronos 1890: 341, 44 = *RPC* II, αρ. 12.

στόμιο των οποίων επικαλύπτεται με πλακοειδή λίθο (Κακαμανούδης 2017: 413). Εργαστήριο αγγείων αυτού του τύπου, που προέρχονται κυρίως από ταφικά σύνολα, υπήρχε στην περιοχή της Φαιστού, ενώ μέχρι πρόσφατα, ανάλογο υλικό είχαν αποδώσει μονάχα οι πτολεμαϊκές νεκροπόλεις της Αλεξάνδρειας (Εγγλέζου 2000: 404), όπου και χρησιμοποιήθηκαν για την ταφή μισθοφόρων, πρεσβευτών και άλλων επισήμων που πέθαναν στην αυλή των Πτολεμαίων (http://www.ypai.gr/site). Οι εμφανείς κατασκευαστικές και διακοσμητικές ομοιότητες των κρητικών παραδειγμάτων με τις ανάλογες αλεξανδρινές υδρίες καταδεικνύουν την κοινή εργαστηριακή τους προέλευση, επιβεβαιώνοντας τις στενές εμπορικές σχέσεις των δύο περιοχών κυρίως στο δεύτερο μισό του 3ου αιώνα π.Χ. (Εγγλέζου 2000: 404). Σημαντικός αριθμός από υδρίες τύπου Hadra έχει βρεθεί και στη Ρόδο (Γιαννικούρη 1996), όπου φαίνεται πως υπήρχε ένα σημαντικό εργαστήριο, το οποίο δραστηριοποιείται από τις αρχές του 3ου έως και τα μέσα του 2ου αι. π.Χ. και υιοθετεί την κατηγορία των συγκεκριμένων αγγείων από την Αλεξάνδρεια (http://www.ypai.gr/site), υποδηλώνοντας την έντονη διακίνηση ιδεών και αγαθών στην ευρύτερη λεκάνη της Ανατολικής Μεσογείου κατά τους χρόνους αυτούς. Στα παραπάνω, έρχεται να προστεθεί το γεγονός ότι τα στρατεύματα της εποχής κατακλύζονται από άνδρες με μοναδικό πόρο τη μισθοφορία ή τη λεηλασία. Στο πλαίσιο αυτό, οι Κρήτες, που υπήρξαν ξακουστοί τοξότες και ιδιαιτέρως δραστήριοι πειρατές υπηρέτησαν ως μισθοφόροι σε διάφορα ελληνιστικά βασίλεια (https://www.archaeology.wiki/blog)· είναι μάλιστα χαρακτηριστικό ότι όσοι διέμεναν στην πτολεμαϊκή Αίγυπτο, οργανώθηκαν σε χωριστή κοινότητα, το *Κρητών Πολίτευμα* (Χανιώτης 2006: 23). Η παρουσία ενός συνόλου δευτερογενών καύσεων σε υδρίες τύπου Hadra στην νεκρόπολη της Εμπασού, ενδεχομένως, εγγράφεται σε αυτό το πλαίσιο, δεδομένου ότι αντιπροσωπεύουν σαφώς μικρότερο ποσοστό ταφών σε σχέση με τους σύγχρονούς τους πλουσιότερα κτερισμένους ενταφιασμούς.

Ο ενταφιασμός, συνιστά τον κανόνα κατά τους ρωμαϊκούς χρόνους και εντοπίζεται σε όλη την έκταση και κυρίως στο ανατολικό τμήμα της νεκρόπολης. Μολονότι θεωρείται ως ο κύριος τρόπος ταφής καθόλη τη διάρκεια των ρωμαϊκών χρόνων, μάλλον περιστασιακά εφαρμόζεται και η πρακτική της καύσης, που μάλιστα θεωρείται ιδιαιτέρως δημοφιλής στην περιοχή της Γόρτυνας (Αναγνωστάκη 2010: 99 και σημ. 513). Η απόθεση των νεκρών στην Εμπασό πραγματοποιήθηκε σε λακκοειδείς κεραμοσκεπείς τάφους ενώ χαρακτηριστική είναι η απουσία κτιστών, λαξευτών θαλαμωτών και γενικά μνημειωδέστερων και περισσότερο φροντισμένων ταφικών κατασκευών. Οι λακκοειδείς κεραμοσκεπείς αυτοί τάφοι είναι αβαθείς και έχουν ανοιχτεί σε αρχαιότερα ταφικά στρώματα των μινωικών - γεωμετρικών και αρχαϊκών χρόνων, όπως μαρτυρούν η κεραμεική και άλλα ευρήματα, με χαρακτηριστικότερες τις τρεις επιτύμβιες αρχαϊκές στήλες που συλλέχθηκαν κατά την ανασκαφή. Επισημαίνεται εδώ ότι, η παρουσία των λίθινων επιτύμβιων στηλών της Αρχαϊκής εποχής, που δεν βρέθηκαν στην αρχική τους θέση, καθώς και των όρθια τοποθετημένων κεραμίδων σε μικρό αριθμό από ελληνιστικούς - ρωμαϊκούς κεραμοσκεπείς τάφους επιβεβαιώνει την πρακτική της σήμανσης, ενώ, όπως είναι γνωστό, στοιχεία για την ύπαρξη επιτύμβιων στηλών μαρτυρούνται, κατά τους χρόνους αυτούς, στο Καστέλι και στη Λασαία (Αναγνωστάκη 2010: 101).

Οι περισσότερες ελληνιστικές - ρωμαϊκές ταφές στην Εμπασό είναι ατομικές και πρωτογενείς, μολονότι σε κάποιες περιπτώσεις παρατηρήθηκε η επαναχρησιμοποίηση του ίδιου, ενδεχομένως οικογενειακού, τάφου, όπως συμβαίνει και σε άλλες περιοχές, με χαρακτηριστικότερα τα παραδείγματα της Κνωσού και της Κυδωνίας (Αναγνωστάκη 2010: 99) ενώ δεν απουσιάζουν και οι ανακομιδές (βλ. και Μανδαλάκη 1996: 638–640). Τα σκελετικά υπολείμματα των παλαιότερων ταφών παραμερίζονταν άτακτα ώστε να πραγματοποιηθεί η νεώτερη, δίχως να τυγχάνουν ιδιαίτερης φροντίδας. Κάτι τέτοιο, εξάλλου, δεν είναι σύνηθες και έχει, μέχρι στιγμής, παρατηρηθεί μονάχα στην περίπτωση των Ματάλων, όπου τα οστά των προγενέστερων ταφών φυλάσσονταν σε ειδικά διαμορφωμένους χώρους, συνήθως ορύγματα, ανοιγμένα στο δάπεδο του τάφου (Αναγνωστάκη 2010: 101).

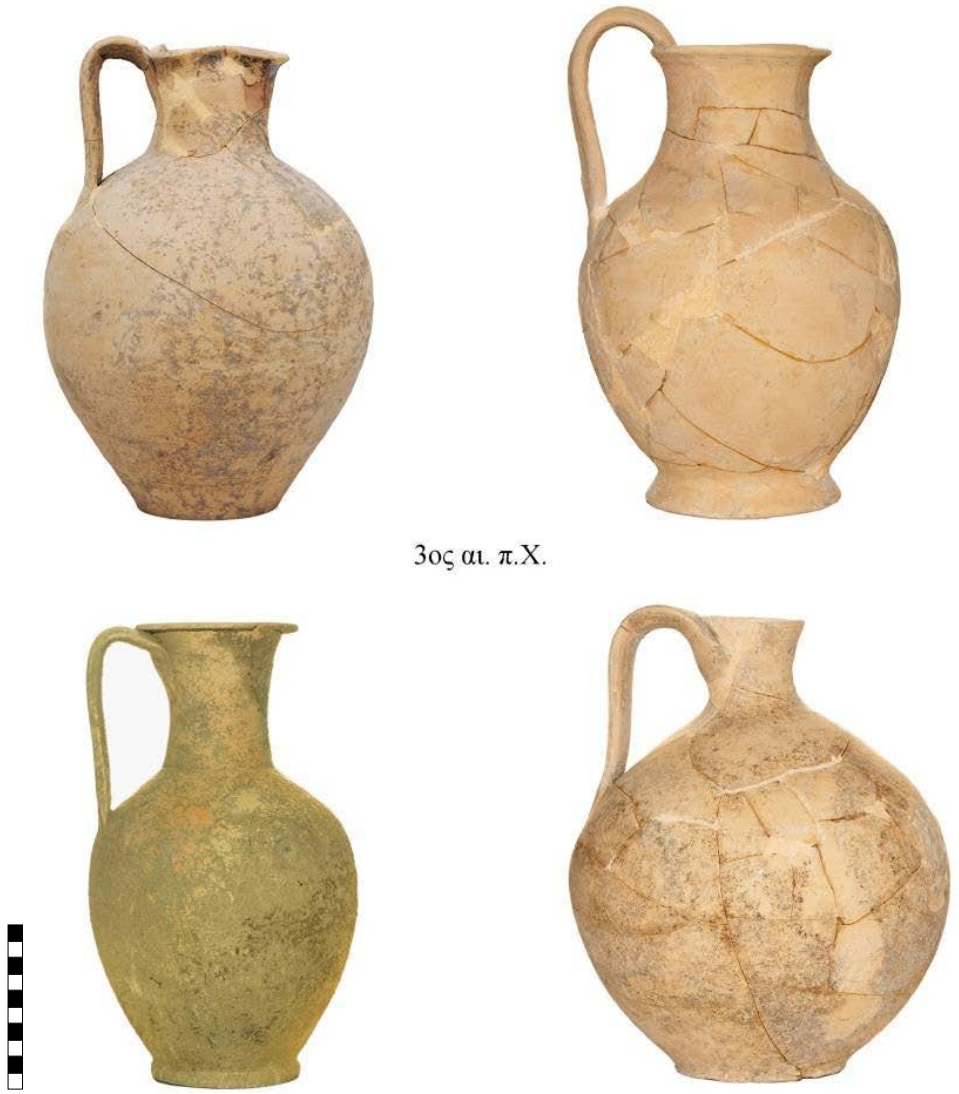
Η θέση, το μέγεθος και η διάταξη των ελληνιστικών - ρωμαϊκών τάφων στην Εμπασό φαίνεται πως επηρεάστηκαν από παράγοντες όπως το πρόσφορο υπέδαφος και η ήδη πυκνή διάταξη των παλαιότερων και σύγχρονών τους ταφών. Ακολουθώντας τον γενικό κανόνα της εποχής, επικαλύπτονταν είτε με ζεύγη στρωτήρων που δημιουργούσαν αετωματική στέγη είτε με δύο έως τέσσερεις κεραμίδες δίρριχτα τοποθετημένες και στερεωμένες με συμπιλητή γη και λατύπες (Αναγνωστάκη 2010: 72 και σημ. 255), όπως στην όμορη Ίνατο (Μανδαλάκη 1996: 638–640). Οι νεκροί είχαν τοποθετηθεί απευθείας στο δάπεδο, το οποίο είχε διαμορφωθεί υποτυπωδώς με στρώση αμμώδους συμπιλητής γης που περιείχε λατύπες (Αναγνωστάκη 2010: 74 και σημ. 263–264, 266) ενώ ίχνη από την χρήση φορείων ή φέρετρων δεν διαπιστώθηκαν. Συνήθης ήταν η ύπτια θέση του σώματος με αυτή των χεριών να μην είναι αυστηρά προκαθορισμένη. Ιδιαίτερη μεταχείριση διαπιστώνεται στην κεφαλή που ήταν ανασηκωμένη και τοποθετημένη σε λίθο, εν είδει προσκέφαλου, πρακτική που έχει επίσης παρατηρηθεί στην νεκρόπολη του Αγίου Νικολάου Λασυθίου (Δαβάρας 1985).

Εικόνα 6.14α. Αμφορίσκος και λύχνος ελληνιστικών χρόνων; β–γ. Οινοχόες ελληνιστικών χρόνων (Γ. Παπαδάκης-Πλουμίδης).

Εικόνα 6.15. Κύπελλα ελληνιστικών χρόνων (Γ. Παπαδάκης-Πλουμίδης).

Συνοψίζοντας, οι ταφικές πρακτικές του ελληνιστικού - ρωμαϊκού Ρύτιου ακολουθούν τους συνήθεις, στις κρητικές νεκροπόλεις της εποχής, άγραφους κτερισματικούς κανόνες. Τα πήλινα αποτελούν την πλειονότητα των αγγείων που συνοδεύουν ταφές περιορισμένης οικονομικής επιφάνειας σε όλες τις επιμέρους ελληνιστικές υποπεριόδους, από την κλίμακα μεγέθους της υδρίας έως εκείνη του λύχνου. Άβαφα ή με απλό επίχρισμα, ακόμα και σε σχήματα που παραπέμπουν σε μεταλλικά πρότυπα (**εικ. 6.14α** αριστερά, **6.14β-γ**),[10] επαναλαμβάνουν μια τυπολογία γνωστή στον

[10] Αμφορίσκος (τέλη 3ου– αρχές 2ου αι. π.Χ.); βλ. Εγγλέζου 2005: 129, αρ. 610, 227–229, πίν. 97, «εργαστήριο Φαιστού».



Εικόνα 6.16. Οινοχόες των ελληνιστικών χρόνων και ρωμαϊκά μυροδοχεία (Γ. Παπαδάκης-Πλουμίδης).

γεωγραφικό περίγυρο του Ρυτίου αλλά και ευρύτερα στην λεγόμενη ελληνιστική *Κοινή*. Χαρακτηριστικά παραδείγματα οι οινοχόες/πρόχοι (**εικ. 6.16α**),[11] αγγεία καθημερινής χρήσης σε μορφολογικές αποκλίσεις που επιχωριάζουν στην κεντρική Κρήτη τον 3ο αι. π.Χ. και αποδίδονται στο λεγόμενο «εργαστήριο της Φαιστού», τα εξίτηλα μελαμβαφή κύπελλα, όπως το σχήματος τουλίπας[12] του ίδιου εργαστηρίου ή το κυλινδρικό (**εικ. 6.15**)[13] αντίστοιχο, τυπικό προϊόν του κνωσιακού *Κεραμεικού*. Ατρακτόσχημα μυροδοχεία (**εικ. 6.16**),[14] και ταπεινοί λύχνοι (**εικ. 6.14α** δεξιά),[15] χρηστικοί στην επίγεια όσο αναγκαίοι και στη μεταθανάτια ζωή, συνοδεύουν συχνότατα τους νεκρούς του ελληνιστικού κόσμου.

Φιλοδοξίες πολυτέλειας ανιχνεύονται σε αγγεία όπως το μελαμβαφές αρυβαλλοειδές ληκύθιο[16] με γραπτό ανθέμιο, απόηχος αττικών κεραμεικών προτύπων σε μια τοπική «φαιστιακή» παραλλαγή τους. Και ακόμα περισσότερο, βέβαια, στις συγκριτικά εντυπωσιακές υδρίες της κατηγορίας Hadra (**εικ. 6.17**)[17] με τον γραπτό, φυτικό κατά κύριο λόγο διάκοσμό τους, από το μεσσαρίτικο «Εργαστήριο της Δάφνης». Η χρήση τους ως τεφροδόχες, δηλαδή ως περιέχον κέλυφος και σήμα συγχρόνως της ταφής, δικαιολογεί τη φροντισμένη κατασκευή και διακόσμησή τους, στοιχεία που άλλωστε τις έκανε δημοφιλείς και εξαγώγιμες στις αλεξανδρινές νεκροπόλεις.

Κτερίσματα από μέταλλα χρησιμοποιήθηκαν με φειδώ και η σπάνις των κοσμημάτων είναι ένας πειστικός δείκτης. Οι μολύβδινες κυλινδρικές πυξίδες (βλ. και Γαβριλάκη 1988: πίν. 346δ) και τα περιορισμένα αριθμητικά οστέινα αντικείμενα δεν αναιρούν την εικόνα, ούτε το πλήθος των, κοινών σε ποιότητα και είδος, γυάλινων αγγείων (**εικ. 6.18**) στους καλυβίτες. Σημειώνεται η σαφής προτίμηση τοποθέτησης των τελευταίων στα κάτω άκρα των νεκρών μολονότι η θέση των πήλινων αγγείων γύρω στο σώμα τους δεν είναι επακριβώς καθορισμένη (Δαβάρας 1985: 210).

Τα νομίσματα από τους τάφους (**εικ. 6.19**), αν και αριθμητικά περιορισμένα, παρουσιάζουν ενδιαφέρον κυρίως επειδή επιτρέπουν ακριβέστερους χρονικούς προσδιορισμούς και συνάμα επιβεβαιώνουν σε μια ακόμα κρητική θέση τη συνήθεια του λεγόμενου χαρώνειου οβολού, δηλαδή την πίστη στην ανάγκη νομισματικού «εισιτηρίου» για τη μεταφορά από το βαρκάρη Χάροντα της ψυχής του νεκρού στον άλλο κόσμο. Φαίνεται μάλιστα ότι οι κοπές επιλέγονταν προσεκτικά με βάση την εικονογραφία τους, αφού σύγχρονες της νεκρόπολης εκδόσεις του νησιού δεν προτιμώνται καθώς οι παραστάσεις δεν συσχετίζονταν άμεσα με τον Κάτω Κόσμο. Αντίθετα αργυροί οβολοί[18] και τριώβολα[19] του Άργους με κεφάλι ή προτομή λύκου προφανώς συνδέονταν συνειρμικά με τον Κέρβερο, τον φύλακα του Άδη, ενώ το περιστέρι στο τριώβολο της Σικυώνας[20] παρέπεμπε στην απεικόνιση της Ψυχής ως πτηνό. Ο σπαρτιατικός οβολός του βασιλιά Αρέως,[21] είναι εξαιρετικά σπάνιος για να βρεθεί σε μια κρητική κώμη τυχαία και χωρίς μεταφυσικούς συνειρμούς με τον απεικονιζόμενο ημίθεο. Αθροιστικά, ο οικονομικός κόσμος του ελληνιστικού - ρωμαϊκού Ρυτίου, όσο τουλάχιστον τον εκφράζει η συγκεκριμένη ταφική δειγματοληψία, εμφανίζεται ανοιχτός τόσο στο μεσσαρίτικο γεωγραφικό του περίγυρο, όπως δείχνει η κεραμεική του «εργαστηρίου Φαιστού», όσο και σε πιο απομακρυσμένες περιοχές όπως η Λύττος και η Κνωσός.[22] Προς πελοποννησιακούς ορίζοντες δείχνουν τα νομισματικά ευρήματα, τεκμήρια ειρηνικών (εμπόριο) ή πολεμικών (μισθοφορία, πειρατεία / δουλεμπόριο) συναλλαγών,[23] ενώ στον γεωγραφικό αντίποδα εγγράφεται το εισηγμένο αλεξανδρινό αλάβαστρο. Το είδος και η χρονική έκταση της τοπικής βιοτεχνίας, σε πηλό, γυαλί, οστό και μέταλλο, δεν αποτελούν, για την ώρα, αναγνώσιμα στοιχεία, αν και στη σφαίρα του αυτονόητου, καθώς τα διαθέσιμα τέχνεργα είναι και περιορισμένα αριθμητικά αλλά και διάσπαρτα στο χρόνο.

[11] Βλ. Εγγλέζου 2005: 126 - 127, αρ. 588, 597, 213 κ.ε., πίν. 93, 127, αρ. 594, 213 κ.ε., πίν. 94, 133, αρ. 631, 213 κ.ε., πίν. 94 (αλλά εδώ με σφαιρικό σώμα και συνακόλουθα πρωιμότερες, περί τα τέλη του 3ου αι. π.Χ.).

[12] **Εικ. 6.15α**. Τέλη 4ου αι. π.Χ.; βλ. Εγγλέζου 2005: 119, αρ. 552, 162–163, πίν. 80γ.

[13] **Εικ. 6.15β**. Τέλη 3ου αι. π.Χ.; βλ. Εγγλέζου 2005: 89, αρ. 392–393, 149–150, πίν. 78.

[14] Εγγλέζου 2005: 88, αρ. 383, 232–235, πίν. 98 (150–100 π.Χ.), 88, αρ. 381 var., 232–235, πίν. 98 (150–100 π.Χ.), 88, αρ. 386, 232–235, πίν. 98 (τέλη 2ου–αρχές 1ου αι. π.Χ.), 88, αρ. 382, 232–235, πίν. 98 (εργαστήριο Κνωσού) (2ος αι. π.Χ.).

[15] **Εικ. 6.14α** (250–225 π.Χ.) (εργαστήριο Λύττου); βλ. Εγγλέζου 2005:110, αρ. 520, 282–284, πν. 109.

[16] Β΄ μισό 4ου αι. π.Χ.; πρβλ. Εγγλέζου 2005: 121, αρ. 561, 247–248, πίν. 101, αλλά με απλούστερη εδώ διακόσμηση (εργαστήριο Φαιστού).

[17] **Εικ. 6.17α** (250–240 π.Χ.); βλ. Εγγλέζου 2005: 115, αρ. 533, 305–312, πίν. 117. **Εικ. 6.17β** (220–210 π.Χ.); βλ. Εγγλέζου 2005: 141, αρ. 674 var., 305–312, πιν. 118. **Εικ. 6.17γ** (250–240 π.Χ.); βλ. Εγγλέζου 2005: 123–124, αρ. 578 var., 305–312, πίν. 114.

[18] Αργυροί οβολοί κοπής 320–270 π.Χ. Πρβλ. για τον τύπο *BCD* 1085.

[19] Αργυρό τριώβολο κοπής 320–270 π.Χ. *BCD* 1092.

[20] Αργυρό τριώβολο κοπής 90–60 π.Χ. *BCD* 345.

[21] Σπάρτη. Αρεύς, Αργυρός οβολός κοπής περ. 265 π.Χ., Grunauer - von Hoerschelmann 1978: 112–113, Gr. II, 3, taf. I (αμάρτυρες σφραγίδες).

[22] Για τα τοπικά ελληνιστικά κεραμεικά εργαστήρια της κεντρικής Κρήτης, βλ. Εγγλέζου 2005: 392 κ.ε., ειδικότερα εργαστήριο Κνωσού (Εγγλέζου 2005: 393–396), Φαιστού (Εγγλέζου 2005: 396–400), και Λύττου (Εγγλέζου 2005: 401–403). Για ανάλογη ανάμειξη αγγείων Κνωσού-Φαιστού, βλ. Εγγλέζου 2005: 397. Αναμφίβολα το εδώ παρουσιαζόμενο υλικό συνεισφέρει τόσο στη διεύρυνση της ποσοτικής βάσης μελέτης όσο και στον γεωγραφικό προσδιορισμό του φαιστιακού λεγόμενου εργαστηρίου, που πιθανολογούμε ότι θα μπορούσε να μετακινηθεί ανατολικότερα, στην, ποικιλοτρόπως ισχυρότερη, Γόρτυνα.

[23] Για το θέμα, βλ. MacDonald 1996: 41–47, και Stefanakis 2007: 308–311, που ουσιαστικά καταλήγουν σ' αυτή την ταλαντευόμενη διάζευξη. Στο ζήτημα της κυκλοφορίας των εξωκρητικών ελληνιστικών νομισμάτων στη Μεγαλόνησο θα επανέλθουμε με πιο στέρεη ποσοτική βάση από άλλο έντυπο βήμα.

Εικόνα 6.17. Τεφροδόχες υδρίες τύπου Hadra (Γ. Παπαδάκης-Πλουμίδης).

Εικόνα 6.18α. Γυάλινα μυροδοχεία (Γ. Παπαδάκης-Πλουμίδης).

Εικόνα 6.18β. Γυάλινο μυροδοχείο και σφονδύλι (Γ. Παπαδάκης-Πλουμίδης).

Εικόνα 6.18γ. Μολύβδινο κιβωτίδιο (Γ. Παπαδάκης-Πλουμίδης).

Εικόνα 6.18δ. Οστέινη ψιμμυθιοθήκη και περόνη (Γ. Παπαδάκης-Πλουμίδης).

Εικόνα 6.19α–στ. Αργυρά και χάλκινα νομίσματα (Γ. Παπαδάκης-Πλουμίδης) α: αργυρός οβολός Άργους (320–270 π.Χ. 12 χ.), β: Αργυρός οβολός Σπάρτης (περ. 265 π.χ. 13 χ.), γ: αργυρό τριώβολο Άργους (320–270 π.Χ., 14 χ.), δ: Αργυρό τριώβολο Σικυώνας (100–65 π.Χ., 16 χ), ε: Ασσάριο Κοινού Κρητών επί Βεσπασιανού (69–79 π.Χ., 21 χ), στ: Cententionales Βάλεντα (367–375 μ.Χ., 17 χ.).

Συζήτηση

Από τη σωστική ανασκαφική έρευνα των τελευταίων δεκαετιών (1954–1955, 1958, 1971, 2007–2008) έχουν προκύψει σποραδικά μεν αλλά πολύτιμα δεδομένα που επιτρέπουν την ανίχνευση ποικίλων συσχετισμών του Ρυτίου με όμορες και μη επικράτειες της Κεντρικής Κρήτης, όπως η Γόρτυνα, η Αρκαδία και η Κνωσός (Εγγλέζου 2014, με βιβλιογραφία), καθώς επίσης με την ευρύτερη περιοχή της Ανατολικής Μεσογείου και ειδικότερα την Κύπρο (Kanta and Karetsou 1998). Πιθανή, εξάλλου, θεωρείται η ύπαρξη κάποιου λιμανιού ανάμεσα στην Ίνατο (Τσούτσουρο) και τον Κερατόκαμπο, όπου θα έφταναν εμπορικά πλοία από την Κύπρο, μεταλαμπαδεύοντας τεχνογνωσίες, ιδέες και συνήθειες της Ανατολής στην περιοχή της νοτιοανατολικής Μεσαράς, από τη Σύμη της Βιάννου μέχρι το Καρφί και από τους Αρκάδες μέχρι το Ρύτιο (Kanta and Karetsou 1998: 170–171).

Μολονότι υπάρχουν ελάχιστα ανασκαφικά τεκμήρια για την οικιστική κατάληψη του χώρου, η ανάπτυξη της ελληνικής πόλης σε τρεις όμορους, φυσικά οχυρούς λόφους και η εξάπλωσή της στα ήπια πρανή τους πιστοποιείται κυρίως από τις πυκνές λιθορριπές και τους επάλληλους αναβαθμούς και «χωραφότραφους», πολλοί από τους οποίους εδράζονται σε αρχαίες τοιχοποιίες. Τα όστρακα, συχνά από γραπτά αγγεία, των ιστορικών χρόνων και τα κατάλοιπα της αρχαίας οχύρωσης στη βόρεια και βορειοδυτική παρειά της φυσικής ακρόπολης στην *Κεφάλα* (Βελεγράκη, forthcoming: σημ. 36 με βιβλιογραφία, και εικ. 9–11), υπαινίσσονται πως ο παλαιότερος οικιστικός πυρήνας βρίσκεται στην ίδια θέση όπου αναπτύχθηκε η ομώνυμη πόλη, τουλάχιστον από την Πρωτογεωμετρική έως και τη Ρωμαϊκή περίοδο, σύμφωνα με τα πρότυπα ανίδρυσης των αρχαίων πόλεων και ακροπόλεων ολόκληρης της βραχονησιωτικής Ελλάδας.

Με τα μέχρι στιγμής ανασκαφικά δεδομένα η νεκρόπολη της πρωτογεωμετρικής - γεωμετρικής - αρχαϊκής και ελληνιστικής - ρωμαϊκής πόλης εκτείνεται στους βόρειους πρόποδες του τρίλοφου *Φαρμακαρά - Κεφάλας - Φραγκοχάρακων* και έως τον *Ταμπαρά* από δυτικά προς ανατολικά, ενώ στον άξονα νότου - βορρά (περι)ορίζεται από τον θολωτό τάφο στον *Κάμπο*. Εξάλλου, οι περισσότεροι κρητικοί οικισμοί των πρώιμων ιστορικών χρόνων, όπως το Καρφί και ο Πρινιάς, καταλαμβάνουν, συνήθως «κατά κώμας», τις κορυφές λιγότερο ή περισσότερο ψηλών λόφων, οι βόρειες πλαγιές των οποίων χρησιμοποιούνται για ταφές (Λεμπέση 1987: 137; Βελεγράκη, forthcoming: σημ. 21). Σε ορισμένες μάλιστα περιπτώσεις, όπως στους Αρκάδες, το παραπάνω μοντέλο κατάληψης του χώρου, που υποβάλλεται προπάντων από τον κατακερματισμό του κρητικού αναγλύφου, διατηρείται ως τη Ρωμαϊκή εποχή (Λεμπέση 1987: 141; Φαράκλας 1998: 60–61). Το ίδιο φαίνεται να ισχύει και στο Ρύτιο, η ακρόπολη, η πόλη και η νεκρόπολη του οποίου εκτείνονται στις ίδιες ημιορεινές, φυσικά οχυρές και περίβλεπτες χωρικές ζώνες, απ' όπου είναι ευκολότερος ο έλεγχος των νευραλγικών οδικών περασμάτων, των πηγών νερού και κυρίως της εύφορης πεδιάδας που απλώνεται ακριβώς βόρεια.

Τα ταφικά ευρήματα στους λόφους της *Κεφάλας* και της *Φαρμακαράς*, και ίσως ακόμη η μνεία του Ρυτίου, ως *χώρας λαμπρής*, από τον Όμηρο, υπαινίσσονται την έκταση του πρωτογεωμετρικού και γεωμετρικού οικισμού, λείψανα του οποίου δεν έχουν μέχρι σήμερα εντοπιστεί, ενδεχομένως λόγω της συνεχόμενης μεταχρήσης του χώρου που αυτός καταλάμβανε μέχρι τους ελληνιστικούς - ρωμαϊκούς χρόνους. Το ίδιο θα μπορούσαμε να υποθέσουμε και για τον αρχαϊκό οικισμό, η ύπαρξη του οποίου μαρτυρείται από τις επιτύμβιες επιγραφές, τις ανάγλυφες ταφικές στήλες και τα θραύσματα των ανάγλυφων πίθων στη νεκρόπολη της *Εμπασού*. Από το ίδιο αρχαιολογικό περιβάλλον προέρχονται επίσης και οι, μέχρι στιγμής, πληροφορίες μας για το ελληνιστικό Ρύτιο, που θα πρέπει να ακολούθησε τα οικιστικά πρότυπα των ισχυρών πόλεων της Κρήτης, για τις οποίες κάνουν λόγο ο Θουκυδίδης, ο Πλάτωνας και ο Αριστοτέλης (Βελεγράκη, forthcoming, με βιβλιογραφία; Λεμπέση 1987: 142). Όπως είναι γνωστό, κέντρο της κρητικής πόλης – κράτους ήταν το άστυ, χτισμένο στις πλαγιές λόφων, γύρω από μία ή περισσότερες τειχισμένες ακροπόλεις ενώ γύρω του εκτείνονταν, μεταξύ άλλων, οι δημόσιες και ιδιωτικές γαίες καθώς και τα νεκροταφεία (Βελεγράκη, forthcoming; Χανιώτης 1987: 191–192). Η συνεχής χρήση της νεκρόπολης στην *Εμπασό* ως τους ρωμαϊκούς χρόνους τεκμηριώνει το συγκεκριμένο μοντέλο κατοίκησης στην πόλη του Ρυτίου, η οποία, από τον 5ο αι. π.Χ. ενσωματώνεται ως κώμη στην επικράτεια της Γόρτυνας (Βελεγράκη, forthcoming; Λεμπέση 1987: 143). Ως κώμη αναγνωρίζεται και από τους Ρωμαίους, χάρη στο ιερό του Σκύλιου Δία, που, σύμφωνα με επιγραφικές μαρτυρίες, βρισκόταν στην περιοχή της Ρυτιασίων κώμης και Πύργου (Βελεγράκη, forthcoming, με βιβλιογραφία)

Ευχαριστίες

Ευχαριστούμε θερμά τον φωτογράφο Γιάννη Παπαδάκη - Πλουμίδη για τη φωτογράφιση του υλικού, τον εργοδηγό Δημήτρη Τριγώνη για τη σχεδίαση του κανάβου της ανασκαφής, τον τοπογράφο Μιχάλη Σπυριδάκη για την εκπόνηση των χαρτών καθώς και το INSTAP.

Bibliography

Αλεξίου, Στ. 1969. Αι Αρχαιότηται Κρήτης κατά το 1968. *Κρητικά Χρονικά* 21: 537–540.

Αλεξίου, Στ. 1969α. Αρχαιότηται και Μνημεία Κεντρικής και Ανατολικής Κρήτης. *Αρχαιολογικόν Δελτίον* 24, Β2, *Χρονικά*: 412–421.

Αλεξίου, Στ. 1972. Αι Αρχαιότηται Κρήτης κατά το 1971. *Κρητικά Χρονικά* 24: 490–493.

Αλεξίου, Στ. 1972α. Αρχαιότητες και Μνημεία Κεντρικής και Ανατολικής Κρήτης. *Αρχαιολογικόν Δελτίον* 27, Β2, *Χρονικά*: 619–624.

Αναγνωστάκη Γ. 2010. *Έθιμα ταφής στην Κρήτη κατά την ρωμαϊκή περίοδο*. Ρέθυμνο: Πανεπιστήμιο Κρήτης.

BCD = Walker, A.S. 2006. *Coins of Peloponnesus. The BCD Collection. LHS Auction 96. 8–9 May 2006.* Zurich: LHS Numismatics Ltd.

Βελεγράκη, Μ. Forthcoming. Από το αρχαίο Ρύτιον στο σημερινό Ροτάσι: μια σύντομη ιστορική διαδρομή. Ομιλία στο Ά Συνέδριο της Μεσαράς.

Coldstream, J.N. 1997. *Γεωμετρική Ελλάδα* (trans. Ε. Κεφαλίδου). Αθήνα: Καρδαμίτσα.

Γκαλανάκη, Κ. 1993. Ανασκαφικές εργασίες. Νομός Ηρακλείου. *Αρχαιολογικόν Δελτίον* 48, *Χρονικά*: 445–468.

Γαβριλάκη Ε. 1988. Σταυρωμένος Ρεθύμνου Θέση Σφακάκι (οικόπεδο Πολιουδάκη). *Αρχαιολογικόν Δελτίον* 43, Β2: 557–558, πιν. 346 γ–δ.

Γαβριλάκη Ε. 1989. Σφακάκι Παγκαλοχωρίου. Οικόπεδο Πολιουδάκη, *Αρχαιολογικόν Δελτίον* 44, Β2: 457–460, πιν. 253 γ, δ–254.

Γιαννικούρη, Α. 1996. Μελανόγραφες υδρίες Hadra από την ελληνιστική νεκρόπολη της Ρόδου: συμβολή στη μελέτη της γραπτής ελληνιστικής κεραμικής. *Αρχαιολογικόν Δελτίον* 51–52: 231–256.

Δαβάρας, Κ. 1985. Ρωμαϊκό Νεκροταφείο Αγίου Νικολάου. *Αρχαιολογική Εφημερίς* 1987: 130–212.

Desborough, R.A. 1995. *Οι ελληνικοί σκοτεινοί αιώνες* (trans. Σ. Κόρτη-Κόντη). Αθήνα: Καρδαμίτσα.

Δετοράκης, Θ. 1990. *Ιστορία της Κρήτης.* Ηράκλειο: Mystis Editions.

Εγγλέζου, Μ. 2005. *Ελληνιστική κεραμική Κρήτης. Κεντρική Κρήτη*. Αθήνα: Υπουργείο Πολιτισμού. Ταμείο Αρχαιολογικών Πόρων και Απαλλοτριώσεων.

Εγγλέζου, Μ. 2013. Κεραμική από θολωτό γεωμετρικό τάφο στο Ροτάσι Ηρακλείου, in Ε.Ρ. Sioumpara and K. Psaroudakis (eds) *ΘΕΜΕΛΙΟΝ. 24 μελέτες για τον Δάσκαλο Πέτρο Θέμελη από τους μαθητές και τους συνεργάτες του:* 139–160. Αθήνα: Society of Messenian Archaeological Studies.

Faure, P. 1960. Nouvelles recherches de speleologie et de topographie Crétoises. *Bulletin de Correspondance Hellénique* 84: 189–220.

Flämig, C. 2007. *Grabarchitektur der römischen Kaiserzeit in Griechenland.* Rahden: Verlag Marie Leidorf.

Grunauer - von Hoerschelmann, S. 1978. *Die Münzprägung der Lakedämonier*. Berlin: de Gruyter.

Κακαμανούδης, Α. 2017. Οργάνωση των χώρων ταφής στην αρχαία Μακεδονία. Unpublished PhD dissertation, Aristotle University of Thessaloniki.

Kanta A. and A. Karetsou. 1998. From Arkades to Rytion. Interactions of an isolated area of Crete with the Aegean and the east Mediterranean, in V. Karageorghis and N. Chr. Stampolidis (eds.) *Eastern Mediterranean: Cyprus, Dodecanese, Crete, 16th–6th cent. B.C.: Proceedings of the International Symposium, Rethymnon, 13–16 May 1997*: 159–173. Athens: University of Crete, A.G. Leventis Foundation.

Kirsten, E. 1940. Rhytion, in *Paulys Realencyclopädie der classischen Altertumswissenschaft* (Supplementband 7). *Adobogiona–Triakadieis*: 1153.

Λεμπέση, Α. 1987. Η Κρητών Πολιτεία (1100 – 300 π.Χ.), στο Ν. Παναγιωτάκης (ed.) *Κρήτη: Ιστορία και Πολιτισμός*, τ. 1: 133–172. Ηράκλειο: Βικελαία Δημοτική Βιβλιοθήκη.

MacDonald D. 1996. Mercenaries and the movement of silver to Crete in the late fourth century B.C. *Numismatic Chronicle* 15: 41–47.

Μανδαλάκη, Σ. 1996. Ανασκαφικές Εργασίες. Νομός Ηρακλείου. *Αρχαιολογικόν Δελτίον* 51, *Χρονικά*: 640–641.

Μανδαλάκη, Σ. (ed.) 2019. *ΔΑΙΔΑΛΟΣ. Στα ίχνη του μυθικού τεχνίτη, Κατάλογος έκθεσης (10.5.2019–1.3.2020)*. Ηράκλειο: Αρχαιολογικό Μουσείο Ηρακλείου.

Ξανθουδίδης, Σ. 2016. Ι΄ Αρχαιολογική Περιφέρεια. Μουσεία, περισυλλογή και συντήρησις αρχαίων. *Αρχαιολογικόν Δελτίον* 2, Παράρτημα: 23–25.

Ξιφαράς, Ν. 2004. *Οικιστική της πρωτογεωμετρικής και γεωμετρικής Κρήτης: Η μετάβαση από την 'Μινωική' στην 'Ελληνική' κοινωνία*, 2 τόμοι. Ρέθυμνο: Πανεπιστήμιο Κρήτης.

Pashley R. 1994. *Ταξίδια στην Κρήτη*, τ. Α (trans. and ed. Δ. Γόντικα). Ηράκλειο: Δήμος Ηρακλείου, Βικελαία Δημοτική Βιβλιοθήκη.

Pendlebury J.D.S., M.B. Money-Coutts and E. Eccles. 1932–1933. Journeys in Crete, 1934. *Annual of the British School at Athens* 33: 80–100.

Pernier, L. 1935. *Il palazzo minoico di Festos. Scavi e studi della missione archeologica italiana a Creta dal 1900 al 1934*, 1. *Gli strati più antichi e il primo palazzo*. Rome: Libreria dello Stato.

Πλατάκης, Ε. 1950. Οι σεισμοί της Κρήτης από των αρχαιοτάτων μέχρι και των καθ' ημάς χρόνων. *Κρητικά Χρονικά* 4: 463–525.

Πλάτων, Ν. 1949. Γεωμετρικός Τάφος Αγιών Παρασκιών Ηρακλείου. *Αρχαιολογική Εφημερίς* 1945–1947: 47–96.

Πλάτων, Ν. 1948. Αρχαιολογικά σημειώματα Στέφανου Ξανθουδίδου. *Κρητικά. Χρονικά* 2: 525–538.

Πλάτων, Ν. 1954. Η Αρχαιολογική Κίνησης εν Κρήτη κατά το έτος 1954. *Κρητικά Χρονικά* 8: 506–517.

Πλάτων, Ν. 1955. Η Αρχαιολογική Κίνησης εν Κρήτη κατά το έτος 1955. *Κρητικά Χρονικά* 9: 553–569.

Πλάτων, Ν. 1957. Η Αρχαιολογική Κίνησης εν Κρήτη κατά το έτος 1957. *Κρητικά Χρονικά* 11: 326–340.

Πλάτων, Ν. 1959. Η Αρχαιολογική Κίνησης εν Κρήτη κατά το έτος 1959. *Κρητικά Χρονικά* 13: 359–393.

Πλάτων, Ν. 1958. Η Αρχαιολογική Κίνησης εν Κρήτη κατά το έτος 1958. *Κρητικά Χρονικά* 12: 459–483.

RIC IX = Pearce, J.W.E. 1933. The Roman imperial coinage. 9, Valentinian I-Theodosius I. London: Spink and Son.

RPC II = Burnett, A., M. Amandry and I. Carradice. 1999. *Roman Provincial Coinage. From Vespasian to Domitian (AD 69–96)*, 2. London: British Museum Press.

Rousaki M., Y. Brokalakis, I. Triantafyllidi, E. Chrysanthakopoulou and D. Pylarinou. 2019. A Glimpse into the Knossian mortuary landscape: the Roman tombs at the Venizeleio hospital, from the 2014 and 2015 excavation seasons, στο I. Gavrilaki (ed.) *Πεπραγμένα του ΙΒ' Διεθνούς Κρητολογικού Συνεδρίου (Ηράκλειο, 21–25 Σεπτεμβρίου 2016)*: online: <https://12iccs.proceedings.gr/el/proceedings/category/38/32/921>

Sanders I.F. 1982. *Roman Crete. An Archaeological Survey and Gazetteer of Late Hellenistic, Roman, and Early Byzantine Crete*. Warminster: Aris and Phillips.

Spratt T.A.B. 1865. *Travels and Researches in Crete*, 1. London: J. van Voorst.

Stefanakis M.I. 2007. Appendix I. Two Argive triobols and notes on Argive coinage in Crete, in M.I. Stefanakis, W.C. West III, D.C. Haggis, M.S. Mook, R.D. Fitzsimons, C.M. Scarry and L.M. Snyder, Excavations at Azoria, 2003–2004, part 1: 308–311. *Hesperia* 76: 243–321.

Svoronos, J.N. 1890. *Numismatique de la Crète ancienne.* Macon: Protat Frères; Bonn: R. Habelt [1972].

Φαράκλας, Ν. (ed.) 1998. *Οι επικράτειες των Αρχαίων Πόλεων της Κρήτης* (Ρίθυμνα Αρ. 6). Ρέθυμνο: Πανεπιστήμιο Κρήτης.

Χανιώτης, Α. 1987. Κλασική και Ελληνιστική Κρήτη, στο Ν. Παναγιωτάκης (ed.) *Κρήτη: Ιστορία και Πολιτισμός*, τ. 1: 177–284. Ηράκλειο: Βικελαία Δημοτική Βιβλιοθήκη.

7.

Did Rome Really Change Anything? Settlement Patterns of Far Eastern Crete in the Hellenistic and Roman Periods

Nadia Coutsinas

In 2008, Angelos Chaniotis, writing about the relationship between the Cretans and the Roman Empire, asked: 'What Difference Did Rome Make?', asserting in the introduction that 'the coming of Rome was the most significant turning point in the history of Crete since the destruction of the Minoan Palaces' (Chaniotis 2008: 83). Indeed, one cannot deny the great impact that the incorporation of Crete into the Roman Empire had on political administration, urbanism and art (Francis and Kouremenos 2016; Harrison 1993; Sanders 1982). But what about the population distribution in the territory? In this chapter, starting from the archaeological evidence that is currently available, I would like to examine whether it is possible to identify any impact of the new political situation of the island on the settlement patterns of eastern Crete at the turn of the Hellenistic and Roman periods. Is an evolution from the Hellenistic period visible? The archaeological data will comprise isolated sites as well as information from surveys, which will reveal the evolution of settlement patterns through time. Several surveys have been conducted in eastern Crete over the past decades; these are more numerous than in the rest of the island, probably due to the gentler landscape of the region that makes it 'easier' to survey (Coutsinas 2018: 125, fig. 3). Eastern Crete — in itself divided in multiple geographical entities working as autonomous local worlds, even if connected to the outside world – would be too great a subject to address here, and I will thus focus on the far eastern part of the island.

Geographical presentation

I understand eastern Crete as the region extending from the plain of the Ierapetra isthmus to the eastern shores of Crete (**Figure 7.1**). I will thus leave outside the discussion the Mirabello bay, except for its most eastern part, the Neapoli corridor with the Kadiston and the Lasithi plateau.

If the Cretan landscape is mostly characterised by its mountains, those of the Sitia region are of lesser height, with their summit of Thryptis reaching 1476m. The plains, occupying an area much more restricted than the mountains, are mostly situated along the coasts, but the situation in far eastern Crete is a bit more complex. Itanos and Sitia are surrounded by limited plains, but these are nothing compared to the great Ierapetra plain on the south coast, with an extent of ca 10km.

The most characteristic feature of eastern Crete, however, is the plain of the Ierapetra isthmus, which links the bay of Mirabello, on the north, to the Libyan Sea and the south coast, where the city of Hierapytna developed (**Figure 7.10**). It is the narrowest point of the island, at only 14km wide. As a consequence, eastern Crete is divided into two main parts, east and west of the isthmus, which acts as a border, with both parts functioning as independent zones. Moreover, one can identify another broadly north-south corridor in the region: that which links the bay of Sitia to the south coast, at the centre of which is situated the city of Praisos. It is, in fact, a zone of lower hills rather than a proper inland plain like the isthmus, but it is clearly a communication route between the north and south coasts, linking the coastal plain of Sitia to the coastal plain of the Makrygialos bay.

An important element that does not receive sufficient attention is the general climate of the period. Weather has evident repercussions on the expected agricultural yield of the arable lands or, more generally, the way the lands were exploited (for instance the hilly or even the mountainous zones).[1] The Cretan climate, however, was not exactly the same as it is now, nor did it remain the same throughout the centuries. In a recent article, J. Moody has very well shown the different phases of climate in the southwest Aegean during the Hellenistic, Roman, and Byzantine periods; unfortunately, for Crete most evidence comes solely from the western part of the island (Moody 2016).

In the 3rd and 2nd centuries BC, the climate 'was cold and relatively dry with substantial interannual variability' (Moody 2016: 65). As a consequence, the growing season seems to have been shorter than in

[1] For the different economic activities on the Cretan uplands, see Chaniotis 1999.

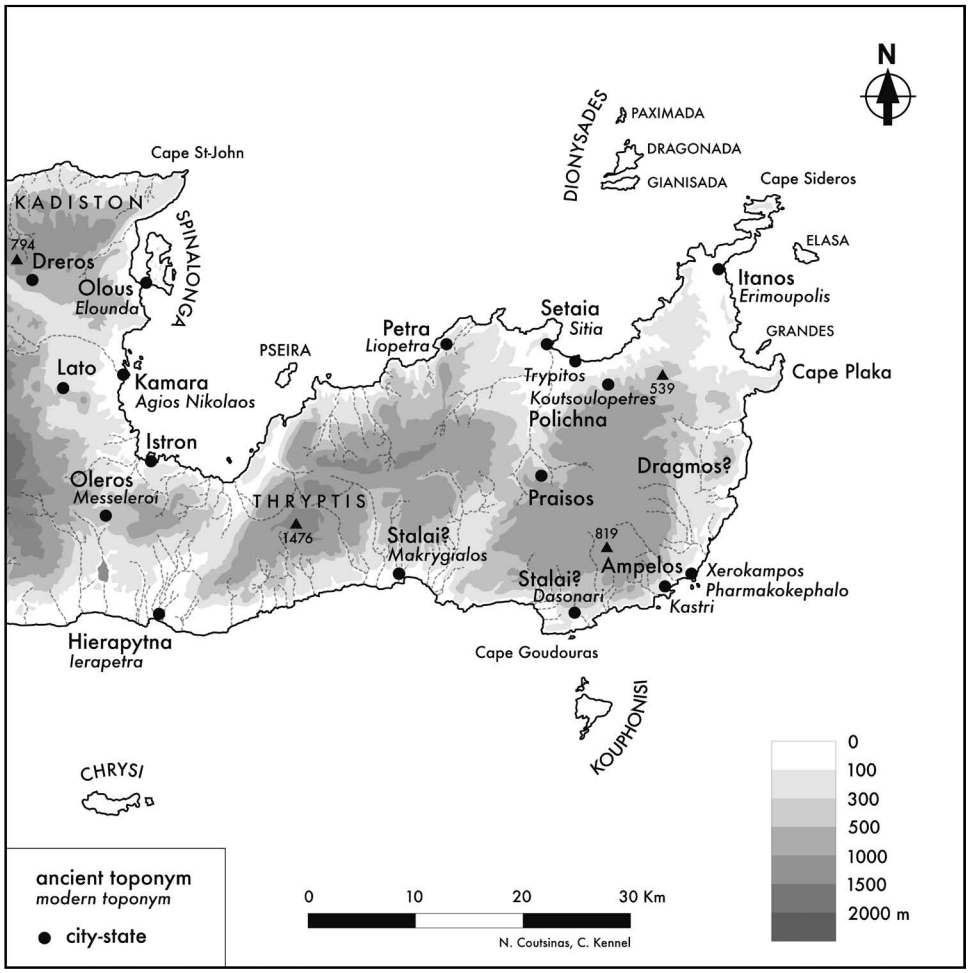


Figure 7.1. General map of eastern Crete, with cities of the Classical period; in the Roman period, Itanos, Hierapytna, and Kamara remain (N. Coutsinas).

earlier periods, with unreliable harvests; less land also seems to have been available for cultivation. Seasonal drought would have made it necessary for the Cretans to use upland pastures, but certainly for a short period of time due to cold winter temperatures. This weather instability is documented in contemporary texts, which describe the variations between the years. In particular, Theophrastus, in 300 BC, writes about the climate of Crete (Theophr., *De Ventis* 13; Moody 2016: 65). He reports that, in the past, mountains were settled and cultivated at a higher level than in his contemporary period thanks to milder winters and higher rainfall. In contrast, at the time of his writing, snow is said to last all year round on the White Mountains (Theophr., *Historia Plantarum* 4.1.3).

A general change is noticeable for the period extending from the 1st century BC to the 2nd century AD, the turning point being situated around 100 BC. The climate was characterised by warmer temperatures — thus leading to milder winters — and an increase in precipitation, both conditions favourable to agriculture, and which had not been observed for the past 2200 years (Moody 2016: 69). As a consequence, uplands could again be exploited.[2] This change is important for a study of the settlement patterns of the Roman period. A general increase in trees is also noticed, an element which prevents erosion and helps to stabilise slopes. Olive trees, however, do not seem to have been part of this increase in forestation, as olive pollen seems to decline from former peaks in the Archaic and Classical periods. These general climatic conditions are visible around all the Mediterranean and in Europe, and it is known as the Roman Climatic Optimum. Already in the second half of the 2nd century AD, conditions began to dry out, and a period of colder temperatures, drought, and instability began.

Considering all these elements, it is certainly not a coincidence if, from the very end of the Hellenistic period and during the first centuries of the Roman period, an increase in agricultural production can be observed in Crete, as well as a densification of occupation.

[2] 'It is said that a rise in annual ambient temperature of 0.6°–1°C could increase the land available for cultivation by 100m elevation' (Moody 2016: 65).

A second important geographical element are the changes since antiquity to the Cretan coastal zones and thus the island's harbours. Situated along the Hellenic Arc, the island of Crete is characterized by abundant seismicity (Papadopoulos 2011; also Gallimore in this volume). This phenomenon was first identified by captain T. A. B. Spratt in the middle of the 19th century (Spratt 1854; 1865, Vol. II, 231–232). The tectonic evolution was not the same across the entire island: if the western part experienced a great uplift of 9 meters, the eastern part has known a differential movement, with a slight uplifting of the southern part and a moderate submersion of the northern part (Flemming and Pirazzoli 1981; Stefanakis 2010). The major uplifts that shaped the current coastal zone took place in the Roman period: at some point in the 1st century BC — perhaps in AD 66 — and a paroxysm in AD 365 (Pirazzoli 2004). Indicators of all these movements and sea level changes since the late Holocene have been collected and documented in a recent study (Mourtzas *et al.* 2016). As a result, some of the sites of eastern Crete are currently partly under water, even if submerged structures have not always been retrieved, as is the case at Itanos, modern Erimoupolis.

The urban centres of eastern Crete in the Hellenistic and Roman periods

The urban landscape of eastern Crete evolved between the beginning of the 3rd century BC and the Roman period, i.e., after the conquest of the island in 67–66 BC. A characteristic of eastern Crete is that all urban centres were placed along the coasts, with the exception of Praisos, situated inland, at the centre of the north-east/south-west corridor dividing the region (**Figure 7.1**). This passageway is parallel to the Ierapetra isthmus, eastward, which, apart from connecting the coasts of the Aegean and the Libyan Sea, marks a border and defines two distinct worlds, which worked independently. At its southern side and bordering the Libyan Sea is Hierapytna, which appeared on the political scene only in the 4th century and did not stop expanding its territory until it obtained control of the northern side of the isthmus (Coutsinas 2013: 331–343). On the eastern side, the most stable element is the city of Itanos, situated at the base of the north-eastern peninsula. It controlled the best harbour on the eastern coast and thus held a key position within the maritime routes of the eastern Mediterranean. It was a mandatory stop on the maritime routes from Asia Minor to Italy. At the beginning of the 3rd century BC, Praisos had already taken control of most of the cities to the east (Setaia — which may have regained its independence at this time —, Polichna, Stalai, Ampelos). Dragmos, the neighbour of Itanos to the south, was probably conquered by Praisos in the second half of the 3rd century BC (Coutsinas 2013: 199–200; Perlman 1995: 165).[3] Praisos, however, was eventually conquered by Hierapytna in the middle of the 2nd century BC (140 or 145 BC), making it henceforth a neighbouring city to Itanos. If the proper urban centres are limited, we will nonetheless see that settlement was dispersed within the countryside.

Concerning the road network, there are no ancient roads preserved in eastern Crete — with the exception of a few rural paths (see below) —, while some Roman roads are known in other parts of Crete (Ilvanidou 2005). Several inscriptions from the area of Hierapytna, however, document intensive road repairs as well as boundary delimitations in the middle of the 1st century AD (Baldwin Bowsky 2006). In addition, an important document from the late-Roman period reveals some information about the road network of the island. The *Tabula Peutingeriana*, a 13th-century manuscript reproducing a map dated to the 4th century AD, presents the Roman road network across the empire, but, strikingly, ignores eastern Crete. Indeed, the main cities of Crete considered are (from west to east) Kissamos, Kydonia, Gortyn, and Hierapytna, among which are placed 14 minor cities.[4] The road network ends at Hierapytna, from which it leads to Chersonesos through Lyttos; no city is mentioned any farther eastward. This confirms the major role of Hierapytna, not only in the region but within the empire, as the city controlled the major passageway linking the northern and the southern coast, and thus connected all the maritime roads plying along Crete. The absence of eastern Crete on the *Tabula Peutingeriana* also highlights the lesser significance of terrestrial roads in the region. In fact, the importance of eastern Crete is primarily based on the maritime routes passing along it. Indeed, maritime connections explain the longevity of the city of Itanos through its harbours and the bay of the Samonion on Cape Sideros (Coutsinas forthcoming).

Kouphonisi and the maritime route from Africa to Crete

An important settlement was established on the island of Kouphonisi, although this was not a city-state. This small island, with an area of 5.25km², is located in southeastern Crete, ca 3 nautical miles off the modern cape of Goudouras (**Figure 7.2**). It has long been identified as ancient Leuke, the island mentioned in inscriptions of the second half of the 2nd century BC

[3] The location of Dragmos is not yet assured. We only know that it possessed a common border with Itanos in the beginning of the 3rd century and was most probably situated south-east of the latter (*IC* III.iv.9, ll. 54–61).

[4] It is a road map more than a strictly conventional cartographic representation, as it has a strongly deformed shape, mainly concerned with the latitude. The distances between the main cities, nevertheless, are defined with a certain accuracy. For the map of Crete, see Pazarli *et al.* 2007; for the cities, see specifically 252–255.

Figure 7.2. North coast of Kouphonisi: view towards the north-western point of the island, with the islets Makroulo and Strongyli; in the background, Cape Goudouras (Erythrae) and, very far west, Makrygialos (photo by N. Coutsinas).

that record the conflict between Itanos and Hierapytna, cities that henceforth shared a common border after the conquest of Praisos by the latter (Viviers 1999: 222–226). That the two most powerful cities of the region fought over its possession reveals its strategic importance. The island, which once belonged to Praisos, was claimed by Hierapytna, along with the sanctuary of Zeus Diktaios and its landholdings. Hierapytna considered that it had rights to Leuke, as the island had once belonged to Praisos, and Hierapytna, having conquered Praisos, was thus entitled to its land holdings (*IC* III.iv.9, 127). It is clear that Leuke, at this time, was controlled by Itanos, since one of the garrisons pledged by Ptolemy II Philadelphos to Itanos had been established on the island; the Egyptian garrisons were taken back at the death of Ptolemy VI Philometor in 45 BC (*IC* III.iv.9, 99–100; Spyridakis, 1970: 82).

The settlement development on Leuke in the Hellenistic and Roman periods is linked, in part, to the exploitation of purple shellfish (murex), already mentioned in an early 3rd century BC inscription mentioning the islands of the Stalitai — among which was certainly Leuke —and the taxes on murex and fish that Setaia and Stalai had to pay to the Praisians, as well as a tithe on port taxes (*IC* III.vi.7; Chaniotis 1996).[5] This inscription also confirms the position of the island on a major maritime route between Crete and Egypt. While southbound journeys from Crete to Africa were facilitated by the meltemi (the Etesian wind), return journeys were necessarily indirect throughout the summer months when it was advisable to travel along the Levantine coast, Cyprus, and the southern coast of Anatolia, in order to reach Crete and the Aegean when coming from Alexandria, rather than risking a more direct route (Pomey 1997: 13). From September onwards until spring, a rare phenomenon, an anticyclonic gyre of an approximate diameter of 100–150kms, facilitates a direct trade route trajectory from the African coast to Crete (Coutsinas *et al.* 2016: 337). Ships embarking from the eastern part of the Libyan coast or from Egypt necessarily sail towards the eastern coast of Crete and not the southern coast of the island. This Ierapetra Gyre, however, is not a regular phenomenon: it does not return at the same date or with the same characteristics, such as dimension in space and speed, which means that there must have been some more and less favourable years. Boats arriving in view of Kouphonisi had to pass the eastern cape to reach the harbour, which has been located at the centre of the north coast, where it was protected from the swell by the two islets (Makroulo, Strongyli) north of the main island (Coutsinas and Guy 2018: 198). While the settlement was located on the northern tip of the island, the depth of the sea there is insufficient, due to a kind of submerged tombolo linking it to the islets.

If the strategic situation of the island was of particular interest to the neighbouring cities in the Hellenistic period, the settlement developed mainly and became prosperous during the Roman period; the luxury of excavated houses with mosaics (Papadakis 1983; Sweetman 2013: 207) and of the city is confirmed by the presence of a theatre and a bath house, both requiring a complex water system (Coutsinas *et al.* 2016: 338–

[5] Murex from Kouphonisi was already exploited in the Minoan period (Bosanquet *et al.* 1902–1903: 276–277; Bosanquet *et al.* 1939–1940: 72). Evidence for exploitation in the Hellenistic–Roman period has been found during the excavation of the settlement, with heaps of murex discovered in houses A and B (Papadakis 1983: 61–62).

Figure 7.3. Approach to Chrysi from the south looking north-east: the Kephala hill at the eastern end of the island with the Thrypti mountains in the background (photo by N. Coutsinas).

341; Papadakis 1986a). We can thus assume that the Roman period saw an increase of trade and hence of maritime traffic passing by Kouphonisi, even if this also occurred in the Hellenistic period. The harbour income came from call and transit, and probably also monies generated from taxes on murex and fishing, as already appears to have occurred in the early 3rd century BC, according to the inscription mentioned above. The settlement flourished in the 1st–3rd centuries AD, but the occupation ended at the end of the 4th century AD, when the settlement was destroyed and never reoccupied.[6]

Another southern island: Chrysi

Another island lies off the southern coast of eastern Crete: Chrysi (4.74km^2) is located about 7.5 nautical miles off Ierapetra's harbour (**Figure 7.3**). Chrysi is more than twice farther from the main island than Kouphonisi, but it was in direct connection to the nearest city, Hierapytna, while Leuke lies ca 25 nautical miles from Itanos. While Chrysi is only slightly smaller than Kouphonisi, this island did not suffer the same fate. No major settlement ever developed on it, although it was occupied in the Hellenistic and Roman periods; the island has been extensively surveyed (Chalikias 2013). It supported a settlement in the Minoan period, which specialized in murex fishing (Brogan *et al.* 2019), but the island was abandoned in the LMIB period and not re-occupied until the Hellenistic era, in the 3rd century BC.

In the Hellenistic period, 20 sites were established, mostly in the late-Hellenistic–early Roman period.[7] The earliest and largest site (Site 4) is situated on the western summit of the island (ca 30m) and is protected by a large enclosure wall. It is connected to a harbour installation on the northern coast (Site 1). Another early site is a fort (Site 18), situated on the eastern summit of the island (ca 30m), and also connected to a harbour installation on the coast to the north (19) and probably also to the harbour of the bay just to the south (Site 17). The other settlements were probably farms. K. Chalikias interprets the function of the fort on Chrysi as a way for Hierapytna to secure its territory to the south and to control the sea routes along the southern coast of Crete. He also sees the large number of settlements as a sign of extensive exploitation of the island, whose inhabitants could export its natural resources (salt, juniper berries, wood, purple dye and fish).

In the Roman period, 18 sites were occupied, 13 of which were present already in the late-Hellenistic period. The settlement pattern is more or less the same as in the previous period. Occupation is well documented until the 2nd century AD but there is less evidence for the

[6] The abandonment of Kouphonisi seems to have to be connected to the great earthquake of July 21st AD 365. Affecting the whole eastern Mediterranean, this event did not only destroy the settlement on the island, but also certainly disrupted the broader trade network in which Kouphonisi operated. Moreover, the AD 365 earthquake — or one of the series of subsequent events — probably disturbed the island's groundwater and affected the aqueduct supply for the town, initiating a process of desertification on the island, which subsequently was inevitably abandoned (Coutsinas *et al.* 2016: 341–342; on the aftereffects of this earthquake, see Gallimore in this volume).

[7] The numbers are those appearing on the maps from the catalogue of the survey (Chalikias 2013: 57–68).

period between the 2nd and the late-4th centuries AD, which means that the island was perhaps less settled in the late-Roman period. This is the period when the urban centre of Hierapytna is densely occupied, but the rural sites in the city's extended territory are much less numerous during the 1st–3rd centuries AD (Chalikias 2013: 36). At that period, there seems to be a concentration of inhabitants in the city, and Chrysi follows this general pattern of the region.

Major differences appear in the settlement patterns on the islands of Kouphonisi and Chrysi, whose size is yet quite similar. The first island sustained only one major settlement,[8] but displayed all signs of wealth in the Roman period — luxurious houses, a theatre, a bath house, a complex water supply system —, while the second contained up to 20 settlements at the same time, but all modest and none seemingly dominating the others. Chrysi also does not seem to have benefited in any way from the exploitation of purple shellfish, already attested in the Minoan period, when purple dye certainly contributed to the wealth of Kouphonisi. The latter was once fortified by the Lagids and later claimed by both Hierapytna and Itanos because of its strategic and economic advantages.[9] Chrysi, on the contrary, does not appear in any ancient written source. Settlement on Chrysi also does not seem to be connected to the maritime trade routes passing by it, as it lacks any signs of prosperity whatsoever. Chalikias' suggestion that the island was extensively exploited because of the growth of Hierapytna in the Hellenistic period does not have much foundation: the small size of Chrysi meant that it would not have been able to contribute substantially to agricultural production, especially given the advantages of the much more extensive Hierapytna plain. The exploitation of the island's very specialised and unique natural resources, such as salt, juniper berries, wood, and fish, may explain interest in it, but this was short lived: Chrysi was less occupied in the 2nd–4th centuries AD, while Kouphonisi flourished in the 1st–3rd centuries AD.

The larger picture and the situation of both islands on the maritime routes of the eastern Mediterranean makes it is clear that Chrysi inevitably plays a secondary role. Ships either coming from Africa and continuing north or sailing from Asia Minor to take the route along the southern coast of Crete towards the west, would first arrive at Kouphonisi, which is thus a major hub and stopover in maritime routes. This certainly explains why it flourished in the Roman period, when maritime traffic was so intense.

The occupation of the north-eastern peninsula: Itanos

In 1994–2005, a survey was conducted on the north-eastern peninsula of Crete, in the territory of the city-state of Itanos.[10] The city was occupied from the Geometric/Archaic period to the middle of the 7th century AD, but traces of occupation in the zone start in the Final Neolithic and continue until modern times, with two main phases: the Late Minoan period and the historical period. The area is characterized by a central plain surrounded by low hills and higher elevations in the western part of the peninsula (**Figure 7.4**). The survey identified 107 sites in total. The void in the central plain may not reflect the reality of the past but rather the disturbance of the area by modern agriculture. It is worth noting, however, that, while no earlier site has been recorded in that area, two sites of the Roman and late-Roman periods have been identified at the very edge of the plain (Vai 69, Itanos 96). This settlement distribution is similar to what has been recognized in the Lasithi plain, where some new sites appear in the Roman period at the edge of the plain and not on the surrounding hills (Watrous 1982: 24).

The number of sites here are similar in the Hellenistic (28 sites) and Roman periods (26 sites), but there is a slight difference in the zones occupied. The Hellenistic sites clearly form a circle around Itanos' urban centre, which seems to be the focus of activity. They are mostly situated on the hills surrounding the central plain and thus the city, with exception the sites at Alatopatela, in the south-west, and Kalamaki and Stephanes, in the south, all of which are situated at a greater distance from the urban centre. In the Roman period, the occupation north of the town is slightly less important; the population now seems to prefer the southern part of the surveyed territory (Kalamaki, Stephanes, and Vai), where many sites were established in the Hellenistic period. This zone had already been densely occupied in the Late Minoan period: Kalamaki, Stephanes and Gyalies concentrated most of the settlements at that time. This settlement history contrasts to the Classical period, when this zone was not at all occupied, except for Kalamaki.

Thus, from the Classical to the Roman period, there is a decrease in occupation from the north to the south of the central plain. The sites west of the plain were abandoned, notably in the Soros area. Soros 74, on top of a hill, flourished in the Hellenistic period. It overlooked the whole plain, and, along with the necessary agricultural installation — enclosures — surrounding a house, a possible watchtower has been identified.

[8] It should be noted, however, that the lack of extensive survey of the island and excavation only of the town could also be in part responsible for this interpretation of Kouphonisi.

[9] *IC* III.iv.9. See discussion above. For the Egyptian garrison specifically, *IC* III.iv.9B ll. 99–100; Spyridakis 1970: 79.

[10] For the detailed description and location of the sites mentioned in the text, see <http://prospection-itanos.efa.gr/> (last accessed 25.04.2021). For the reports of the fieldwork at Itanos (excavation and survey): Kalpaxis *et al.* 1995; Greco *et al.* 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003; Apostolakou *et al.* 2003–2004.

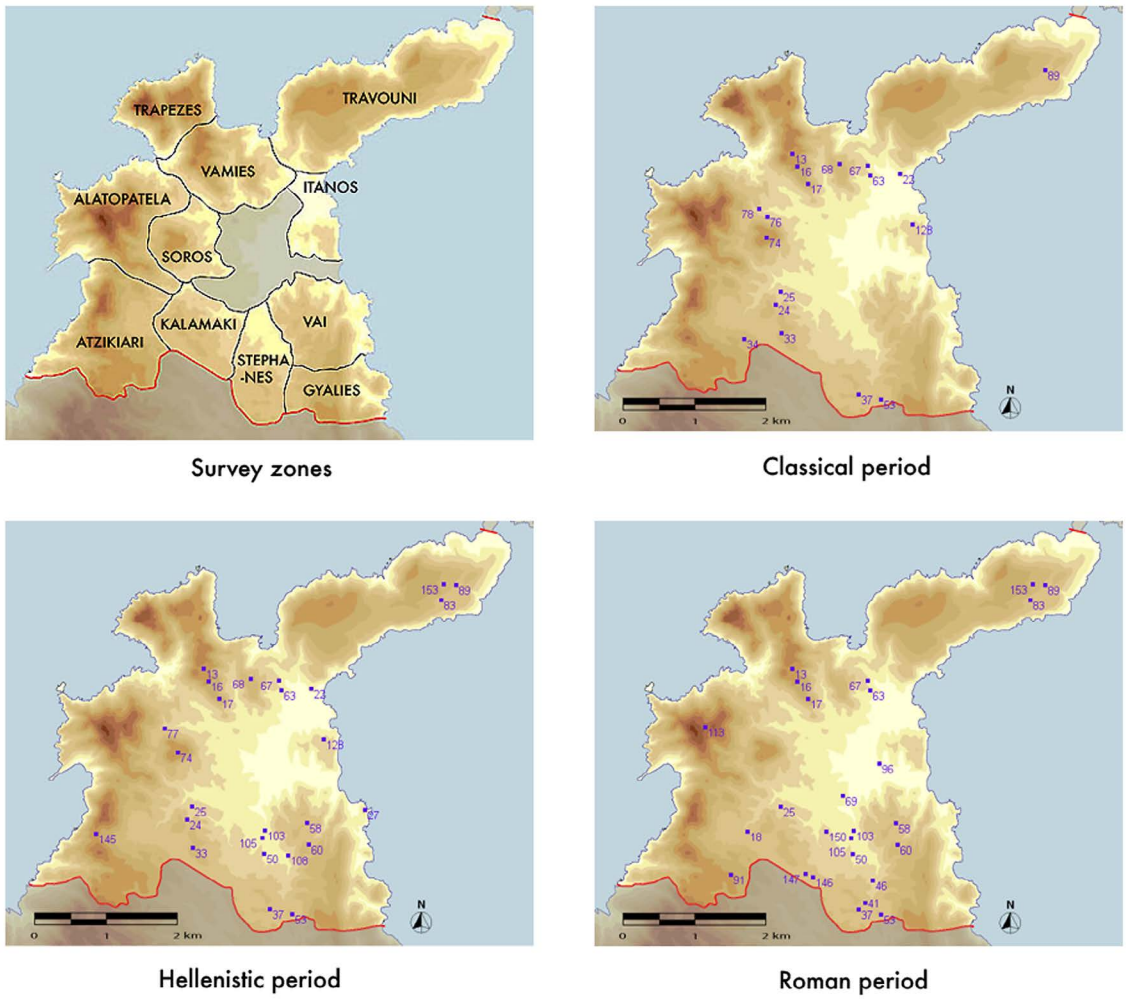


Figure 7.4. The Itanos survey zones and the sites of the Classical, Hellenistic, and Roman periods (<http://prospection-itanos.efa.gr>, N. Coutsinas).

A few sites also show a continuity in occupation at least from the Classical to the late-Roman period, some of which had been occupied since the Archaic period: Gyalies (53), Kalamaki (25), Travouni (89), Vamies (67).

The most striking element in the Hellenistic-Roman occupation around Itanos is the settlement on the central north-eastern part of the Travouni promontory, north of the city. On the plateau, now totally eroded and deserted, there was a once fertile small basin, cut through by the modern road leading to the military base farther north (**Figure 7.5**). The presence of two farms in the basin (Sites 83 and 89) shows agricultural exploitation in the Hellenistic and Roman period, even if a couple of sherds indicate use already in the (early) Classical period at Travouni 89 (Apostolakou *et al.* 2004–2005: 992, fig. 3). The cultivated area is delimited by a vast system of enclosures. A long wall (153) on the northern side of the basin, encloses a surface of 42ha, nearly evenly divided in two by a perpendicular wall, with further enclosures in both parts; the southern part of the area is protected by the cliffs, making the erection of a wall unnecessary.

The western part (19ha) protects building 83 and the eastern part (23ha), building 89. This area preserves a vast zone of terraces as well as a threshing floor. The long walls identified on the promontory, which create a large enclosure divided in two, seem to be boundary walls essentially intended for the confinement or exclusion of livestock to prevent the destruction of crops. A photographic aerial campaign has identified a series of plots on the now completely barren plateau — due to strong Aeolian deflation — on the northern side of the long wall. This small area, barely 6ha, was divided into parallel strips that produced very small plots on a measure that can be traced to the Greek agrarian stadium of 210m.[11] This system confirms that the agricultural exploitation of this area of the territory of Itanos began before the Roman occupation, even if by then it surely was developed, following, however, the earlier arrangement.

[11] A detailed study of this agricultural system by Max Guy will shortly be published.

Figure 7.5. View of the central part of the Travouni basin from the north-east; buildings 83 and 89 are indicated; enclosure wall 153 is visible (noted W), as well as the dividing wall in the centre (noted w). In the north-west is the zone where Aeolian deflation reveals parallel strips of ancient culture parcels (©EFA; photo and map by M. Guy, N. Coutsinas).

Compared to the other sites in the Itanos territory, the double farm at Travouni (83, 89) exploits an enormous zone. It is noteworthy that the largest agricultural exploitation in this area dates to the Hellenistic and Roman periods; the densest occupation occurred in the Late Minoan period — mostly south of the surveyed zone — but these farms were set so close together that none was able to cultivate a large area. The Travouni agricultural territory goes far beyond the needs of an individual household. We may recognize here a market-oriented agriculture that may have been established before the Roman period. The exploitation of these farms is restricted only to the Hellenistic and Roman periods, even if at Travouni 89 a few sherds attest to a minimal presence in the Classical period and until the late-Roman period. Settlements of this size do not continue into later periods and remain a very limited phenomenon.

A few sanctuaries have been identified that testify to the religious geography of Itanos. Even if their chronology is not perfectly established, they are important in defining the city's territory and its main focus points. Two extra-urban sanctuaries were already known before the work of the Itanos survey team: the sanctuary of Athena Samonia (or Minoa) at Cape Sideros (Spratt 1865, I, 189–190; Davaras 1980; Sporn 2002: 40; Fenet 2016, 47–48, 63–65.), which was a landmark for sailors on the maritime routes of the eastern Mediterranean; and the sanctuary of Zeus Diktaios at Rousolakkos[12] that was at the centre of the conflict between Itanos and Hierapytna in the 2nd century BC (Coutsinas 2013: 319–321). There are no clear remains of a temple — or even cult place — inside the urban centre, but the very neatly built isodomic retaining wall on the north side of the western acropolis was certainly the base of a public building, possibly a temple.[13] West of the urban centre, on the hill of Vamies, a sanctuary to Demeter has been identified (Brun and Duplouy 2014).[14] On the north-western side of the territory, a well-built structure on the bay of Magatzes, west of the Trapezes promontory, has also been identified as a small temple (Alatopatela 158). Even if no characteristic material has been found, there is little doubt that it was a small religious building, due to its very neat masonry.[15]

[12] For the history of discovery and further bibliography, see Gaignerot-Driessen 2011: 425–428.

[13] Kalpaxis *et al.* 1995: 714; Viviers 2006: 100. See the image in Coutsinas 2013: 120, fig. 36. First mentioned in Spratt 1865, I: 195 and Mariani 1895: 314–315.

[14] Site Vamies 63 in the website of the survey (see footnote 10). Material from the 9th century to at least the 2nd century BC has been retrieved.

[15] The only datable sherd retrieved is dated to the Orientalizing–Archaic period, but this not an indication of the timespan the building was in use.

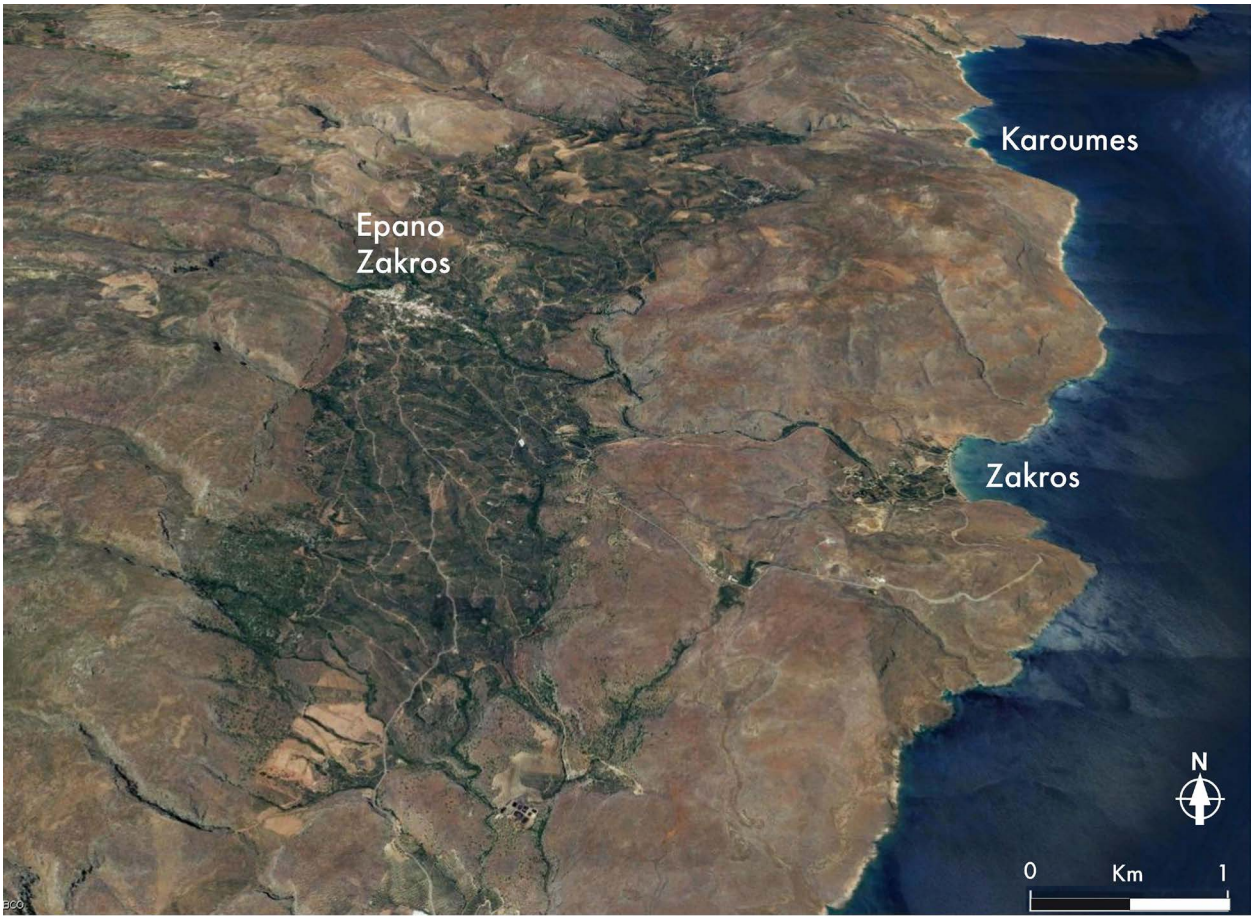


Figure 7.6. Oblique view of the fertile basin of Zakros, with the modern village of Epano Zakros and the two harbours of Karoumes and Zakros (Google Earth, N. Coutsinas).

The occupation of the south-eastern part of eastern Crete

South of the Itanos peninsula, the other more extensive arable land is what I refer to as the Zakros basin (**Figure 7.6**).[16] Situated at an altitude of ca 200m, it is enclosed on the west by the mountains delimiting the Modi plateau[17] and to the east by the mountains isolating it from the coast. Access to the sea is through the Chochlakies gorge into the Karoumes bay, and the Zakros gorge into the Zakros bay, which was the site of a palace in the Minoan period. The village of Epano Zakros is today roughly situated at the centre of this basin, on its western edge, at the outlet of a gorge where an important spring now exists. North of the village, at the place called Kali Strata, L. Mariani identified the remains of a Roman house with several elements of baths — hypocaust and tepidarium — (Mariani 1895: 293) and considered as a villa by I. Sanders (1982: 137–138). A find of a stamped amphora fragment, probably Rhodian of the 4th–3rd centuries BC, is considered by Sanders as a possible sign of prior Hellenistic occupation of the site. The presence of a villa should be connected to the agricultural exploitation of this fertile basin of Zakros, which could have been market oriented. The nearest harbour was the bay of Zakros, 5km to the east. At the northern edge of the bay, a possible Roman rock-cut fish tank was first cited by C. Davaras (Davaras 1974, 87); this feature is 3.30 × 3.00m and was submerged at a depth of ca 1 m (Flemming and Pirazzoli 1981: 78). Later better defined as a 'fish trap' (Mourtzas 2012: 2400, 2402; Mourtzas and Kolaiti 2017a: 691), this tank probably supplied the Roman villa identified at Epano Zakros (Mourtzas and Kolaiti 2017a: 696). These two elements are surely evidence for the Roman occupation of this area. Furthermore, the bay of Karoumes, the natural harbour for the northern part of this basin, shows evidence of Roman re-occupation, long after the Minoan period, when several buildings had been erected. Two guardhouses have been identified: the

[16] For a detailed map of the region, see the website of the Sitia Geopark <http://www.sitia-geopark.gr/en/downloads/map.aspx> (last accessed 25.04.2021).

[17] Settlement of the Modi plateau is only attested in the two small basins of Katelionas and Lamnoni, from the 3rd century BC to the 9th century AD. This reoccupation, after a dense occupation in the Minoan period and a complete abandonment until the 4th century BC, should probably be linked to the conquest of Praisos by Hierapytna in 145 or 140 BC and the displacement of the Praisians in the neighbouring lands (Branigan 1998: 87–90).

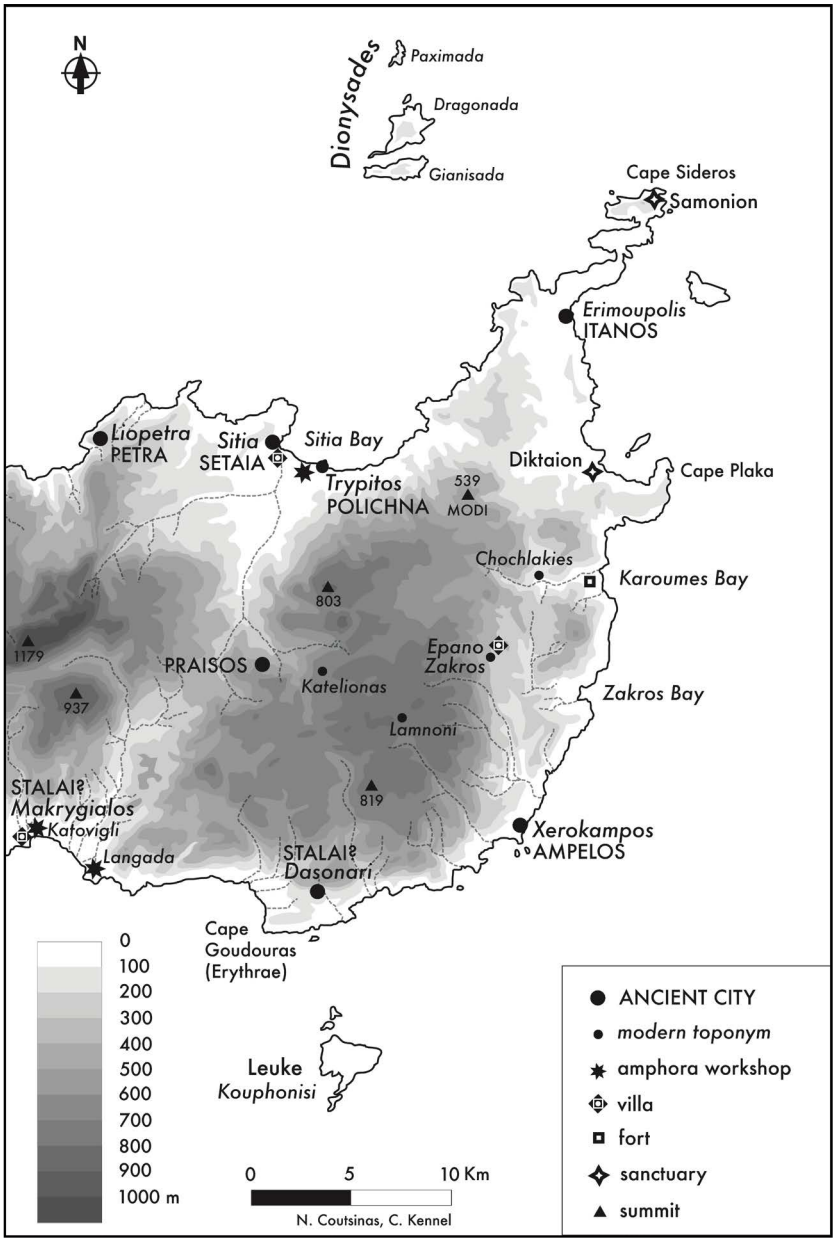


Figure 7.7. Map of far eastern Crete in the Roman period, showing sites discussed in the text (N. Coutsinas).

Mother Fort and the Sea Guard-House. The latter shows re-occupation in the 1st century BC until the 2nd century AD (Vokotopoulos 2007: 168–170), a chronology which corresponds with the agricultural exploitation of the Zakros basin. Generally speaking, the buildings of the bay of Karoumes show some use during all the historical periods: there is a sanctuary of the Archaic period (Sporn 2002: 42), but occupation in the Hellenistic period should not be restricted only to the presence of fishermen (Chryssoulaki and Vokotopoulos 1993: 75–76 and 74, fig. 4). The bay of Karoumes was certainly one edge of the southern border of the city of Itanos, and thus the military use of the Minoan guardhouses was most probably never abandoned (Coutsinas 2013: 321, 330, 406).

Sitia bay and Makrygialos bay

Two amphora workshops have been identified on the southern coast (**Figure 7.7**) (Empereur *et al.* 1992: 637–638; Gallimore 2018: 376–383; Marangou 1995: 49–50). This industry has some topographical requirements: amphora production needs water, and the proximity of a river is thus necessary; location on the coast, near a harbour, is necessary for the future distribution of the amphorae. One workshop has been identified at the place called Lagada, in a small plain at the eastern part of the larger bay of Makrygialos, near cape Psalidia. Amphora fragments were scattered over 1ha, in an area where no other ancient evidence has been recorded. Amphorae of type AC1b and AC2 have been identified, which point to production between the beginning of the

Figure 7.8. From the site of Trapezonta, the hilly coastal plain of Sitia; the town can be seen far left; at the centre of the image is the Trypitos peninsula (photo by N. Coutsinas).

2nd and the end of the 3rd centuries AD. The second Roman amphorae workshop is situated at the western part of the same bay, east of the Katovigli promontory at modern Makrygialos. There, an imperial amphorae workshop dump was temporarily brought to light during the demolition of an old house, soon covered by a new one and thus leaving no evidence and no pottery for study; this was located just north of the harbour of the modern town. On the headland, however, is situated a very large Roman villa, occupied from the 2nd century BC and abandoned in the 4th century AD (Papadakis 1979: 406–409, 1980: 524–525, 1986c: 30–39; Sofianou 2009: 923–924; Sweetman 2013: 206–207). It is just 500m south-east of a large Minoan villa, showing the advantage of the position near the harbour. We have no indication of the amphora types made in the Makrygialos workshop nor of its chronology, but amphorae found in the villa, of the AC1 type, are dated rather late in the imperial period, from the end of the 3rd–early 4th centuries AD. If we assume that this chronology also applies to their manufacture, then the two workshops were not contemporary.

The bay of Makrygialos is situated at the southern end of the north-east/south-west corridor dividing eastern Crete into two parts, or, rather, forming the only inland communication route between the north and the south coasts of the region (Coutsinas *et al.* 2021). Formed by the valley of two rivers, it is a zone auspicious for agricultural cultivation, even if mostly rather hilly. At the centre of this corridor was located the city of Praisos, which, from the beginning of its history, sought to gain access to the sea to both the north and south, an attitude that defined its expansionist policies. This development was achieved already by the middle of the 4th century BC, according to the testimony of the Pseudo-Skylax (*Περίπλους*, 47: Πραισὸς διήκει ἀμφοτέρωθεν; see Counillon 2001). On the northern side of this corridor is the bay of Sitia, the location of the cities of Setaia and Polichna, or modern Trypitos (Coutsinas 2013: 198–202; Vogeikoff-Brogan 2011: 410–411; Vogeikoff-Brogan and Papadakis 2004) (**Figure 7.8**).

At Sitia, Davaras identified a series of ten rock-cut fish tanks underneath the Kazarma fortress in the modern harbour, thus revealing a Roman presence otherwise barely in evidence (Davaras 1974; Mourtzas 2012: 2393; Sanders 1982: 136). These features, however, have now been re-interpreted as ancient quarries, which changes the perception of how this part of the coast was used in antiquity (Mourtzas 2012: 2405). Nonetheless, one of the basins — rectangular, with an apsidal shape of the seaward side, and coated with hydraulic mortar — could have been a pool belonging to a large bath complex that has disappeared (Davaras 1974: 93, fig. 2 (90), pls 15b–17; Kelly 2004: Appendix 1, 94–95). The presence of a bath complex may imply that of a villa, which seems highly plausible, given the existence of the villa at Makrygialos and the fact that Sitia is located at the northern edge of what I call the Praisos corridor.

The only other Roman amphora workshop identified in the region (Empereur *et al.* 1992: 634–637) is located quite near Sitia at Trypitos, east of the headland where the Hellenistic town was situated.[18] A dump revealed fragments of amphora types AC1b and AC3, which dates the production into the 2nd century AD, and perhaps up to the beginning of the 3rd century. The earliest evidence for the production of wine amphorae in the Hellenistic period comes from Trypitos, where excavations of the town brought to light a new type of amphora, dated in the late-3rd or early 2nd century BC (Vogeikoff-Brogan and Apostolakou 2004: 422–425).

It thus appears that wine amphorae were produced in eastern Crete throughout the Hellenistic and Roman periods, either on one side — the northern in the

[18] The town was established at Trypitos at the beginning of the 3rd century BC and abandoned around the middle of the 2nd century (Vogeikoff-Brogan and Apostolakou 2004: 421).

Hellenistic period; the southern in the Roman period — or on both sides of the north-east/south-west corridor passing through the region. The same geographical connections are documented for the Minoan period: the place called Petras, a small plateau situated slightly inland exactly between Sitia and Trypitos, was occupied continuously since the Final Neolithic period, and became the main centre of the region in the Middle Minoan period, with the construction of what has been identified as a Palace (Tsipopoulou 2012; 2016). In parallel, the southern coast was also occupied: a Late Minoan villa has been uncovered at Plakakia, slightly inland and a few hundred meters north-west of the Roman villa on the Katovigli promontory; a Minoan settlement was also found 2km east, at the promontory of Diaskari, situated at the centre of the bay of Makrygialos.[19]

In the Hellenistic period, the harbour town of Trypitos was under the control of Praisos. The city was then conquered in the middle of the 2nd century BC (145 or 140) by Hierapytna, which took control of its territory. The abandonment of Trypitos coincides with this event. The reason seems uncertain, but it could be that, with the shift westward of the main urban and political centre, the location of this harbour was no longer useful. At that point, it probably ceased to be a stepping-stone on trade routes,[20] an economic element which can cause the end of a settlement as surely as a destruction. Indeed, it was easier for Hierapytna to control the traffic along the isthmus, which is, at any rate, a better terrestrial passageway. On the northern coast, the harbour of Mochlos gained importance in that period, followed by Tholos at the beginning of the 1st century BC.[21] In the 1st century AD, Crete became an important stopover for grain ships coming from Egypt on the route to Rome. These could, in these circumstances, have taken on supplementary cargoes of Cretan goods (Gallimore 2017a: 141–142).

There seems to be a gap of about three centuries in amphora production in this region, with no evidence dating to the early Roman period. The conquest of Praisos and the shift of all activity to the isthmus westward can certainly explain this lacuna. Production in this area begins again in the 2nd century AD, when it is attested in both the north, at Trypitos, and the south, at Lagada. Activity at Trypitos was short-lived, as it seems to cease at the beginning of the 3rd century, while it continued until the end of the same century at Lagada. It is this period in which production moves westward to Makrygialos, where it is attested possibly until the beginning of the 4th century AD.

The simultaneous operation in the 2nd century AD of the workshops at Lagada and Trypitos reveals the renewed importance of the north-east/south-west corridor because of the increase in wine production, which had to be packed for transport. For the Hellenistic period, one can wonder if the destination of the wine was the island itself or some farther place. The presence at Trypitos and Xerokampos of amphorae from Kos, Rhodes, and Knidos, however, clearly show the existence of a trade route linking the Knidian peninsula to Egypt through eastern Crete.[22] For the Roman period, excavations indicate that Cretan amphorae are widely distributed around the Mediterranean, and have been found in Egypt, at Alexandria, in Italy, in Britain, and in Gaul (Empereur *et al.* 1992: 642–648; Gallimore 2016: 176–178; Gallimore 2019: 601–602, esp. fig. 5; Marangou 2004; Williams 2003). The end of the Trypitos workshop and the distribution of most of the Roman amphorae workshops on the south coast of Crete (Marangou 1995: carte 2) most certainly reveals the importance of the southern road on the great trade routes in the Mediterranean, especially for the routes between Crete and Africa (Coutsinas *et al.* 2016: 335–336). It is tempting to see the existence of the joint Roman province of Crete and Cyrenaica as an explanation for this tendency. But, strangely enough, Cretan amphorae, while exported throughout the Mediterranean, have not been found so widely in Cyrenaica. They are attested at the end of the 1st century BC and during the 1st century AD, but then their quantity drops off in the 2nd century (Gallimore 2011: 448), when Cretan lamps instead become common (Chevrollier 2016: 16–17).

J.-Y. Empereur and A. Marangou published these workshops with the assumption that they were situated directly in the fertile plains where the wine was being produced, which reduced transport until it was bottled in amphorae and embarked towards its final destination (Empereur *et al.* 1992: 644, 648). They connected them to the presence of maritime villas, making Crete parallel to the situation in Italy. For the moment, the evidence is not really sufficient to transpose the Italian model on to Crete, where villas are, at any rate, not so common. Instead, it seems highly probable that wine production was not limited to the coastal plains where the workshops were situated. In the region of Itanos, the modern wine of the Toplou Monastery is renowned,[23] and we can also imagine that the

[19] See Davaras 1997 and bibliography; he identifies it as a cult place and places the main Minoan settlement at Diaskari (1997: 119).

[20] Imported amphorae found at Trypitos show relations with Kos, Rhodes and Knidos (Vogeikoff-Brogan and Apostolakou 2004: 425–427).

[21] Vogeikoff-Brogan 2012: 81, 2020: 26; the author's analysis of one assemblage shows that Hierapytna's expansion to Mochlos could have occurred as early as the end of the 3rd century BC.

[22] Vogeikoff-Brogan and Apostolakou 2004: 427. The relationship between eastern Crete and Rhodes at that period is also attested by the treaties dating to the end of the 3rd century BC between Rhodes and the cities of Hierapytna, Olous (Coutsinas 2020: 38–39), and Chersonesos.

[23] I am aware that the comparison with the modern period is dangerous, because of the changes in the climate, or other factors that could have influenced agricultural production; for instance, the numerous olive trees today on Crete are the result of specific politics, first through the Marshall Plan, and then through funds from the European Union. However, this comparison shows that the region is favourable to vine cultivation.

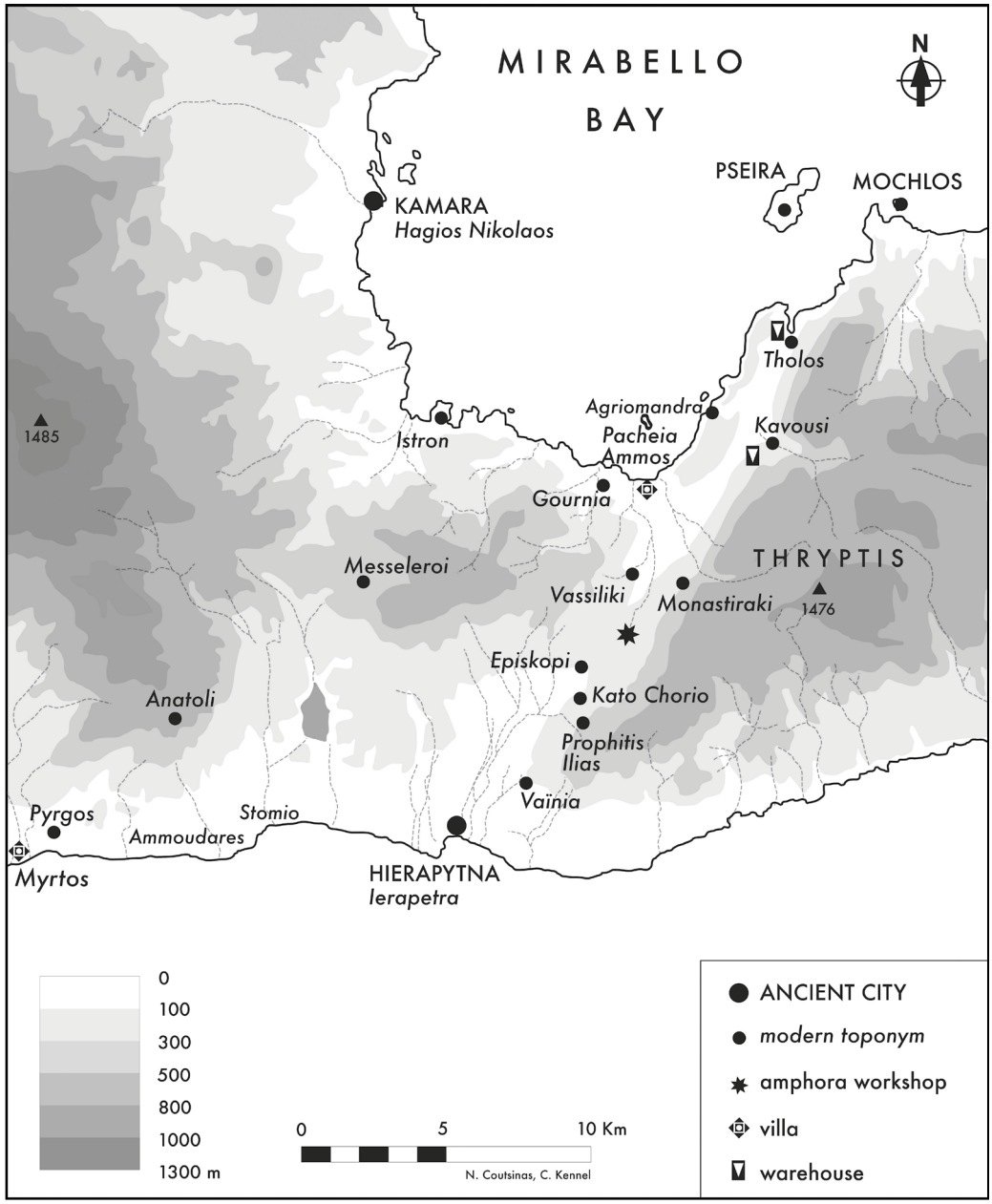


Figure 7.9. Map of the Ierapetra isthmus in the Roman period, showing sites discussed in the text (N. Coutsinas).

Figure 7.10. The plain of Ierapetra (covered with greenhouses) seen from the village of Anatoli in the north-west. The town of Ierapetra is the protruding cape situated roughly at the centre of the image (photo by N. Coutsinas).

Figure 7.11. From the site of Azoria, looking west, the northern part of the isthmus plain and the village of Kavousi. The harbour of Agriomandra is situated at the centre of the image (the gorge leading to it is slightly visible, behind the hill just in front of Kavousi) (photo by N. Coutsinas).

basin of Zakros contained vineyards. What is unknown, however, is whether the grapes were brought directly by boat to the amphorae workshops, and whether there was a nearby wine press. Was wine produced on the site of the vineyards, and then transported to the place where it was bottled in amphorae to be exported? To me, these workshops show production clearly intended for export, and their situation at the outlet of the main terrestrial ways — the isthmus and the Praisos corridor — emphasizes this interpretation. S. Gallimore has pointed out that 'increased amphora production on Crete implies a greater focus on the production and export of surplus food' (2017a: 141). He also stresses, very justly, that amphorae should not automatically be seen as containers for wine. For Crete, however, the varying archaeological evidence and ancient textual references lead to the conclusion that 'the majority of Cretan amphorae served as packaging for wine' (Gallimore 2017a: 144).

The settlement of the isthmus

The settlement of the Ierapetra isthmus in the Hellenistic and Roman period also provides significant information for this period (**Figure 7.9**; Coutsinas *et al.* forthcoming). The zone between the Praisos corridor and the Ierapetra isthmus has not been surveyed, but its mostly mountainous terrain — the Thryptis Mountain range, with highest peak at 1476m — excludes the existence of major settlements.

The only urban centre on the south-eastern coast of Crete in the Roman period is the city of Hierapytna, whose rapid expansionism is the dominant factor of settlement patterns in the region during the Hellenistic period. Circumstances and chronology for the foundation of the city remain unknown, as the dense urbanism of the modern town and its coastal surroundings has not permitted the recovery of the Greek town (**Figure 7.10**).[24] Most of the ancient architecture still visible is Roman, the period when the city experienced significant development, similar to and contemporary with two other harbour cities on the north coast, Chersonesos and Kissamos (Papadakis 1986b; Sanders 1982: 139–140).

The urban centre of the city is situated on the south coast, originally probably on the small cape closing to the west the bay of Ierapetra, more or less the location of the modern Kato Mera district and just north of the Venetian fortress Kale.[25] In the Roman period, the city extended to the west, in the zone now called Viglia. This is the only possible reconstruction for the town, as it offers the only relatively good harbour on the south coast of the isthmus, and exactly at the outlet of the plain leading to the harbours of Pacheia Ammos and Tholos on the north coast. This location allowed the town to control both the coastal plain, from the eastern bay of Ierapetra to Stomio and Ammoudares, on the west, and the maritime traffic passing by its harbour.

[24] For the most extensive and complete overview of our knowledge on Hierapytna, from its earliest history to the Roman period, using both textual and archaeological sources, see Stefanaki 2021: 29–196; also Guizzi 2001: 283–322 and Gallimore 2011: 87–160. The harbour of the city is currently under study by Michael J. Curtis (University of Leicester) with the Laboratory of Geophysical Satellite Remote Sensing and Archaeoenvironment of IMS-FORTH and the Ephorate of underwater antiquities <https://www.ims.forth.gr/en/project/view?id=165> (last accessed 23.05.2021).

[25] For a study of the general geographical setting, especially of the harbour, see Mourtzas and Kolaiti 2017b.

Figure 7.12. Tholos bay from the north and the wall of mountains bordering the eastern side of the isthmus plain; the village of Kavousi is visible (photo by N. Coutsinas).

It is also significant that no other Greek city lies on the south coast between Stalai, to the east of Hierapytna, whose location is still uncertain (Coutsinas 2013: 186), and Keratokampos, to the west, both more than 30km away from Hierapytna. In addition, the location of Hierapytna at the narrowest point of the island and undoubtedly the easiest access to the north coast, was certainly at the origin of the expansionist policy of the city towards the north coast.

For the settlement of the region, two surveys provide good information for at least the northern half of the isthmus,[26] one centred on the Late Bronze Age settlement of Kavousi (ca 54km^2) (Haggis 2005) and one around the Minoan town of Gournia (24km^2) (Watrous *et al.* 2012).

In the northern part, as highlighted by the Kavousi Survey, it is now known that the region was completely abandoned from the middle of the 5th century BC until sometime in the 3rd century BC (Haggis 2005: 86), with no major activity until the beginning of the 1st century BC. At this time, the population seems to have returned to five sites (Haggis 2005: fig. 16); the village of Kavousi is the only proper settlement (**Figure 7.11**).[27] Other sites with Roman occupation are Tholos (site 1) on the coast and Hagios Antonios, just south of it, Chordakia (site 28), farther south on the Kampos plain, as well as three places at Lakkos Ambeliou (sites 40–42), on the plain just at the outlet of the gorge moving west to the small harbour of Agriomandra (site 39), which has produced evidence of use only for the Roman and Byzantine periods. The sites at Lakkos Ambeliou and the harbour of Agriomandra should have worked together. These few sites are considered as probable farmhouses dependant on some larger settlement. The use of the very small bay of Agriomandra as a harbour shows the great level of maritime trade in the Roman period and even more in the 1st century AD, the date of underwater deposits of Roman amphorae (Haggis 1996: 189). The bay of Agriomandra — small but nicely recessed, protected at its entrance by an islet, and accessed by land through a small gorge — is the only anchorage on the eastern side of the Mirabello between Pacheia Ammos and Tholos. The use of this bay emphasizes the need for a harbour for uploading the agricultural goods coming from this part of the isthmus, which probably outweighed the inconvenience of the site.

By the 2nd century AD, the sites on the Kampos plain have reached nine. They clearly are linked to the exploitation of the two harbours of Tholos (**Figure 7.12**) and Agriomandra. The most striking feature is the Roman warehouse at Tholos (Haggis 1996, 2005: 90–93, figs 23–24). Moreover, south of Kavousi village, at the place Sta Lenika (site 57) (Haggis 2005: 125–126) another warehouse has been identified, as well as a building that could be 'a villa or administrative building'. For D. Haggis, the hinterland of Tholos (i.e., the plain of Kampos) has only limited agricultural production, and the impressive warehouse should not be interpreted

[26] See limits of the surveys in Coutsinas 2018: 128, fig. 5. The historical occupation of the southern part of the isthmus (i.e., the Ierapetra plain) is unfortunately still unknown. However, it has recently been surveyed but with a special focus on the Bronze Age, at least as it appears from the first publication (Chalikias and Oddo 2019: see map of the zone studied, xiv). We hope this work will be followed by other publications on the historical periods of the region. On the difficulty of dating the Roman sites and of comparing surveys, see Gallimore 2017b, 107–110 and Coutsinas 2018: 124–125.

[27] The numbers are those appearing on the maps from the catalogue of the survey (Haggis 2005: 90–148).

Figure 7.13. View of the eastern entrance of the Mirabello bay from Myrsini: the islet of Mochlos, and behind it the island of Pseira; in the background, Agios Nikolaos (photo by N. Coutsinas).

as designed to hold it (Haggis 1996: 189–190). It should also be stressed that this structure is not surrounded by any agricultural equipment for oil, wine, or grain processing. This building should rather be seen as a storage facility at the northern edge of an 'over-land transportation route' along the isthmus (Haggis 1996: 190). In the Roman period, Crete is on the route from Egypt to Rome, through south-west Asia Minor (Knidos and Rhodes), for the transport of grain (Haggis 1996: 200–201, figs 20–21). Harbours of eastern Crete are ports of call on this route, and the warehouse of Tholos shows that this site was a transhipment point for cargo that could easily be transferred from the north to the south coast, more quickly than sailing around Cape Sideros. The presence of a smaller warehouse at Sta Lenika confirms the land route along the isthmus.

A word should be said here about the islet of Mochlos, situated at the north-eastern entrance of Mirabello bay (**Figure 7.13**).[28] It became an island only in the late-Roman or the early Byzantine period (Vogeikoff-Brogan 2020: 24, n. 4), due to the subduction of the coast; Mochlos was a peninsula in antiquity and thus offered good shelter for boats. Its location is quite strategic, as it controls the maritime routes along the northern coast of the island and access to the Mirabello bay from the east. Mochlos played an important role in the Hellenistic period as an outpost for the dominant cities in the region.

Already in the Classical period, Praisos established a watchtower on the island, as an indication of its control over the whole area (Coutsinas 2013: 331–339; Vogeikoff-Brogan 2020: 25).[29] When the city was conquered by Hierapytna in the middle of the 2nd century BC, the island also passed into its control. Mochlos was occupied at the end of Hellenistic period, ca 100 BC, when new settlers established themselves on the south slope of the island. The settlement seems to have been destroyed at the moment of the Roman conquest but flourished again until the final abandonment in the last quarter of the 1st century BC, around 30 BC (Vogeikoff-Brogan 2020: 27). The island thus played a role at the turn of the Hellenistic and Roman period but was quickly abandoned. The exploitation of Mochlos by Hierapytna, even for a short time, is not easily understood, considering its very northern position and isolation, and somewhat landlocked position in a bay not easily accessed by terrestrial roads. N. Vogeikoff-Brogan has argued that Hierapytna was interested in the harbourage fees on boats in transit for trade products coming from outside Crete but might not

[28] For the history of Mochlos at the turn of the Hellenistic and Roman period, see Vogeikoff-Brogan 2020. It is of significance that the larger island of Pseira, west of Mochlos and also at the eastern entrance of the Mirabello bay, did not play any role in the Roman period, while it contained an important settlement in the Minoan period, with a re-occupation of some sort in the early Byzantine period (Betancourt *et al.* 2004, 2005).

[29] A new dating of the summit wall — the northern wall of the fort — to the 14th century AD removes the attribution of its construction to Praisos; see the presentation of N. Vogeikoff-Brogan, 'A Site for All Periods: The Diachronicity of Mochlos, East Crete'. March 26, 2020. <https://www.ascsa.edu.gr/news/newsDetails/videocast-a-site-for-all-periods-the-diachronicity-of-mochlos-east-crete> (last accessed 25.04.2021).

Figure 7.14. View of the isthmus plain towards the north, from the site of Prophitis Ilias; the first village visible is Kato Chorio (photo by N. Coutsinas).

have yet taken possession of the better harbours of Pacheia Ammos and Tholos (Vogeikoff-Brogan 2020: 26). The development of local agricultural and surplus intended for exports, as will be detailed below, led to the necessary abandonment of Mochlos: in the Roman period, the Hierapytnian economy was mainly based on export and transit trade, and quick and easy access to its northern harbours was essential.

The Gournia Survey extended farther south than the Kavousi Survey, from Pacheia Ammos to Kato Chorio.[30] The maps of the Hellenistic, early Roman and late-Roman sites of the region show a clear development in the occupation of the region (Watrous *et al.* 2012: maps 40 [Hellenistic], 42 [early Roman], 47 [late Roman]). The Hellenistic period shows only a few fieldsites and farmsites — about a dozen —, mostly on the eastern side of the plain, at the foot of the Thryptis mountains.[31] Notable is the harbour settlement at Halepa (site 23; map 40), already established by the end of the Classical period, which shows an interest in maritime export. The extreme nucleation of settlement in the northern isthmus in the early Classical and Hellenistic periods has been interpreted as a possible indication that this area was then in dispute between Lato, Hierapytna, and possibly Lyttos. The new settlement pattern at the end of the Hellenistic period clearly shows the final domination of Hierapytna. In the late-Hellenistic period, the foundation of the only village (site 139), 600m west of Kato Chorio, shows the new attractions of the region, now more than just a few families in their farms.

In the Roman period, the change in the region's settlement is drastic. The landscape is far more densely occupied, and settlement even increases throughout the period. Many farms and hamlets are disseminated along the northern part of the isthmus — now on the plain itself; a concentration halfway between the modern villages of Vassiliki and Episkopi is probably due to better access to water (Vogeikoff-Brogan 2012: 84). More than ten village-sized settlements can now be found on the route to the harbour (sites 61, 73, 80, 86, 88, 91, 104, 117, 139), mainly established in the 1st centuries BC and AD. In the late-Roman period, the concentration already noted became even more dense, with the establishment of many farms around the villages.

Near the coast but inland, the Roman settlement of Gournia (site 9) is situated just east of the Minoan town. It had developed infrastructure, with water supplied by an aqueduct. On the coast, the site of Halepa (site 23) does not continue after the 1st century AD. West of the bay, where the modern harbour is situated, was a settlement occupied in the 3rd–4th centuries AD. At the centre of the bay, just east of the stream flowing into the sea, is a large building (site 21) dated to the 2nd century AD, with traces of an aqueduct, which runs from Vassiliki. The site was first interpreted as a warehouse by Sanders (1982: 140), similar to that at Tholos, but A. Kelly has identified a bath in the complex, leading to its general assumption that it is a villa (Kelly 2004: Appendix 1, 103–105). This may be an estate centre, as it is fairly isolated and without other sites in the vicinity (Vogeikoff-Brogan 2012: 86). This element is quite interesting as it is the only one identified in Crete for the moment.[32] However, we have seen that it is highly probable that the villa of Epano Zakros was also the centre of an estate, as well as that at Makrygialos; there may also have been a villa at Sitia.

Another important aspect of the settlement pattern of the isthmus is the re-occupation in the Roman period of the site at Prophitis Ilias (site 150), on a hill 500m south of Kato Chorio, which had previously been occupied from the LM IIIC to the Classical periods, in the 4th century BC (Vogeikoff-Brogan 2012: 81) (**Figure 7.14**).[33] The presence of a village there marks it as an important

[30] Watrous *et al.* 2012; for the Hellenistic and Roman periods, specifically Vogeikoff-Brogan 2012.

[31] The numbers are those appearing on the maps, from the catalogue of the survey (Watrous *et al.* 2012: 105–133).

[32] The Sphakia Survey, though, has identified several sites as estates as well, but the information is not yet published (personal communication, J. Francis).

[33] The site is one of the candidates for the ancient Larisa mentioned by Strabo (9.5.19) and connected with Hierapytna: after a synoecism with this city, Larisa was then abandoned. For the most complete, recent overview on the location of Larisa, see Guizzi and Stefanaki 2011. Also Stefanaki 2021: 47–51.

stopover along the isthmus plain passageway. The only post-Minoan settlement between Prophitis Ilias and Hierapytna is at Vaïnia, exactly halfway between Prophitis Ilias and the sea. The occupation there started at the end of the Bronze Age but the settlement reached its largest extent in the Classical period (Nowicki 2000: 86–89; Sofianou 2020: 8). It is quite puzzling that no Roman phase of occupation has been identified (the site was later re-occupied in the Venetian period). Then, on the coast, west of Hierapytna, the most important settlement is situated at Myrtos (Hood *et al.* 1964: 93; Sanders 1982: 138; Sweetman 2013: 207–209). While the Minoan settlement was situated on a hill east of the river Myrtos, the Roman town is located west of it, on the coast. A bathhouse has been identified there, now cut through by the coastal road (Kelly 2004: Appendix 1, 100–102; Kelly forthcoming). This bath is dated to the end of the 1st and 2nd centuries AD, and it should probably be seen as the private baths of a villa, which should be added to those discussed above.

Intense agricultural activity in the isthmus is evidenced by the discovery of elements such as work basins, pithoi, amphorae, and millstones (Vogeikoff-Brogan 2012: 86). Many sites have also yielded local amphorae without necessarily evidence of ceramic manufacture. These all point to the production of wine and oil, certainly intended for export. Participation in international trade is shown by the large amount of imported pottery recovered on many sites of the area (Vogeikoff-Brogan 2012: 89–91). This activity shows connections with Italy, Asia Minor or the eastern Aegean, Syria, and North Africa. At least seven *trapeta* attest to oil production (Watrous *et al.* 2012: map 46). The fact that they are always associated with import pottery, probably shows that this production was intended for export.

At the very centre of the isthmus, site 86 is the probable location of a workshop for the production of transport amphorae of type AC1, based on retrieved material: wasters, overfired wall pins, slags. The site was active in the 3rd–4th centuries AD, a chronology significant for an understanding of the management of the region's agricultural surplus. It has been associated with a nearby vineyard and farmstead (sites 85, 87), and may also be connected with further production centres. As already mentioned, the area is one of the most densely occupied of the isthmus. Unlike the workshops at Trypitos and Makrygialos, situated near the coast and thus allowing for future transport by boat to the final destination, the workshop at site 86 is located at the very heart of the agricultural production. The products can be immediately packed into amphorae, which have then to be transported to one of the harbours. In that regard, its location in the centre of the region provides an outlet both towards the north and the south coast, and it could have served all the hamlets and farmsteads around. It should also be mentioned that isolated wasters have been found at other sites (sites 74, 103, 104) (Vogeikoff-Brogan 2012: 87), which suggests that there were more amphorae workshops nearby, all situated 1km north or 500m south of site 86, and thus in the same central area of production.

It is surprising that no amphorae workshop active in the Roman period has been identified in the area of Hierapytna, as one might expect, as it is the largest urban centre in this part of the southern coast, and especially since a workshop is known to have been active there in the Hellenistic period, at the end of the 3rd or the 2nd century BC (Marangou-Lerat 1995: 156). Stamped amphora handles from Hierapytna have been found at Alexandria, thus showing the beginning of an export trade, but also at Trypitos, on Crete.[34] Petrographic analysis of transport amphorae found at Mochlos and Myrtos Pyrgos has also distinguished at least three local types 'which were apparently products of one or several workshops in the vicinity of ancient Hierapytna' (Vogeikoff-Brogan and Apostolakou 2004: 418). For the Roman period, however, the nearest amphora workshop on the south coast after Makrygialos is at Arvi, 35km west of Hierapytna, and belonging to another political sphere (Coutsinas 2013, 227), as the territory of Hierapytna did not extend that far west. This absence is puzzling but may simply reflect the lack, until now, of archaeological discovery.

Conclusion

After this overview of the situation in far eastern Crete, it appears that, indeed, the settlement patterns of the Roman period have some specific characteristics, but most of them began already at the end of the Hellenistic period. The broad chronological benchmarks historians use to distinguish periods may be useful for historical speech but, in fact, they are purely theoretical and do not reflect the reality of the life of the populations. The integration of Crete into the Roman empire certainly had consequences on the administration of the island as well as on its inner relationships. The famous incessant wars between poleis in the Hellenistic period no longer had any validation, and the pacified relations could now benefit from the general development of trade, which is clearly visible. Such trade seems to have already begun before the Roman conquest of the island, towards the end of the Hellenistic period, at least in the 2nd century BC. The turning point would probably have been the conquest of Praisos by Hierapytna, which entirely changed the political organization of the region. The only urban centres of far eastern Crete in the Roman period are Itanos and Hierapytna. The first city never extended its inland territory, but always controlled the eastern maritime access to Crete, while the second slowly conquered the whole region so as to control the

[34] For all the occurrences (and corresponding reference), see Gallimore 2011: 122, n. 160.

maritime traffic passing by the northern and southern coasts of the isthmus.

Gradually, the countryside became more densely settled and displaying a growing population and a developing agricultural exploitation of the land with the benefits of the now more favourable climate. In the territory of Itanos, the settlement pattern of the Hellenistic and Roman periods was roughly similar, but the main difference from other periods is the large agricultural complex, perhaps an estate, situated at Travouni, on the northern peninsula. Another agricultural basin seems to have been intensively exploited, the basin of Zakros, located south of the Itanos territory. The existence of a Roman villa at Epano Zakros and the use of the harbours of Karoumes and Zakros certainly confirms this interpretation. Farther west, the Praisos corridor was also highly cultivated: the wine amphora workshops at Trypitos and on Makrygialos bay reveal vine cultivation in the region at a level intended for export. The villa of Makrygialos and the probable villa of Sitia could have controlled such agricultural production.

The settlement of the isthmus of Ierapetra shows a clear development from the Hellenistic to the Roman period. The plain could not be fully exploited until it was entirely under the control of Hierpaytna, and also before the pacification of the maritime traffic with the victory over 'Cretan piracy'. Progressively, it was covered with villages and farmsteads. The harbours of Mochlos — although short lived — then Tholos and Pacheia Ammos developed. The warehouse at Tholos facilitated a great amount of agricultural goods passing through this harbour, at the northern edge of an 'over-land transportation route' along the isthmus. The other probable warehouse identified further south, at Sta Lenika, could just have been a stop on that route or a storage facility for local agricultural production intended for export. Furthermore, the existence of a transport amphora workshop at the centre of the isthmus is evidence of an important local agricultural industry, comprising both wine and oil, which is also confirmed by numerous *trapeta*. A villa identified in Pacheia Ammos has been convincingly considered as the centre of an estate in this northern part of the isthmus. It is expected that there was also one on the southern coast, around Hierapytna, even if modern urbanisation in the zone has not yet revealed any remains; the nearest attested villa being situated at Myrtos, 15km west of Hierapytna. Indeed, the settlement of the southern coast and more generally of the Ierapetra plain has still to be studied in order to complete this picture of the exploitation and occupation of the isthmus.

More than bringing new major changes to the settlement patterns of far eastern Crete, the Roman period sees the enhancement and flourishing of different trends already initiated in the last century of the Hellenistic period.

Acknowledgements

I am grateful to Jane Francis and Michael Curtis for inviting me to participate in this volume in honour of George W. M. Harrison and his contributions to the study of Roman Crete. It was a challenge to write in this strange period (the covid-19 pandemic and the multiple lockdowns) when it was not possible to access a library. I would like to thank colleagues and friends who provided me with their work: Scott Gallimore, Amanda Kelly and Natalia Vogeikoff-Brogan, as well as Michael Curtis for his bibliographical help.

This article has been written in the framework of the SettleInEastCrete Project (FORTH-IMS), which has received funding from the Hellenic Foundation for Research and Innovation (HFRI) and the General Secretariat for Research and Technology (GSRT), under grant agreement N°2388.

Bibliography

Apostolakou, St., E. Greco, Th. Kalpaxis, A. Schnapp and D. Viviers. 2004–2005. Travaux menés en collaboration avec l'École française d'Athènes en 2003–2004. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 128–129: 988–1005.

Baldwin Bowsky, M.W. 2006. Highways and byways of Roman Hierapytna (Crete): four new Claudian road inscriptions. *Annuario della scuola archeologica di Atene* 84, serie 3, 6:1: 551–580.

Betancourt P.P., C. Davaras and R. Hope Simpson (eds) 2004. *Pseira* VIII: *The Archaeological Survey of Pseira Island,* Part 1 (Prehistory Monographs 11). Philadelphia: INSTAP Academic Press.

Betancourt P.P., C. Davaras and R. Hope Simpson (eds) 2005. *Pseira* IX: *The Archaeological Survey of Pseira Island,* Part 2: *The Intensive Surface Survey* (Prehistory Monographs 12). Philadelphia: INSTAP Academic Press.

Bosanquet, R.C., R.M. Dawkins, M. Niebuhr Tod, W.L.H. Duckworth and J.L. Myres. 1902–1903. Excavations at Palaikastro. II. *Annual of the British School at Athens* 9: 274–387.

Bosanquet, R.C. 1939–1940. Dicte and the temple of Dictaean Zeus. *Annual of the British School at Athens* 40: 60–77.

Branigan, K. 1998. Prehistoric and early historic settlement in the Ziros region, eastern Crete. *Annual of the British School at Athens* 93: 23–90.

Brogan T.M., D. Mylona, V. Apostolakou, P.P. Betancourt and Ch. Sofianou. 2019. A Bronze Age fishing village on Chryssi, in K. Chalikias and E. Oddo (eds) *Exploring*

a Terra Incognita on Crete: Recent Research on Bronze Age Habitation in the Southern Ierapetra Isthmus: 97–109. Philadelphia: INSTAP Academic Press.

Brun, H. and A. Duplouy. 2014. Le sanctuaire de Déméter à Vamiès (Itanos, Crète orientale). Topographie, architecture et petite plastique de terre cuite. *Bulletin de Correspondance Hellénique* 138: 201–244.

Carrier, C. and F. Chevrollier. 2016. Définitions chronologiques et géographiques des frontières de la province de Crète-Cyrénaïque au Ier siècle a.C.: l'apport des sources textuelles et numismatiques, in H. Berthelot, A. Boiché, P.-A. Caltot, M. Diarra, Fl. Réveilhac and É. Romieux-Brun (eds) *Vivre et penser les frontières dans le monde méditerranéen antique: Actes du colloque tenu* à *l'Université Paris-Sorbonne, les 29 et 30 juin 2013* (Scripta Antiqua 89): 67–80. Bordeaux: Ausonius Éditions.

Chalikias, K. 2013. *Living on the Margin: Chryssi Island and the Settlement Patterns of the Ierapetra Area, South-Eastern Crete* (British Archaeological Reports International Series 2549). Oxford: Archaeopress.

Chalikias, K. and E. Oddo (eds) 2019. *Exploring a Terra Incognita on Crete Recent Research on Bronze Age Habitation in the Southern Ierapetra Isthmus*. Philadelphia: INSTAP Academic Press.

Chaniotis, A. 1999. Milking the mountains: economic activities on the Cretan uplands in the Classical and Hellenistic period, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders, Sidelights on the Economy of Ancient Crete* (Heidelberger Althistorische Beiträge und Epigraphische Studien 29): 181–220. Stuttgart: Franz Steiner Verlag.

Chaniotis, A. 2008. What difference did Rome make? The Cretans and the Roman Empire, in B. Forsén and G. Salmieri (eds) *The Province Strikes Back. Imperial Dynamics in the Eastern Mediterranean* (Papers and Monographs of the Finnish Institute at Athens 13): 83–105. Helsinki: Finnish Institute at Athens.

Chevrollier, F. 2016. From Cyrene to Gortyn. Notes on the relationship between Crete and Cyrenaica under Roman domination (1st century BC–4th century AD), in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 11–26. Oxford: Oxbow Books.

Chryssoulaki, S. and L. Vokotopoulos. 1993. Το αρχαιολογικό τοπίο ενός ανακτόρου. Η έρευνα επιφανείας στην περιοχή του μινωικού ανακτόρου Ζάκρου Σητείας. *Αρχαιολογία* 49: 70–78.

Counillon, P. 2001. La description de la Crète dans le Périple du Ps. Skylax. *Revue des Études Antiques* 103: 381–394.

Coutsinas, N. 2013. *Défenses crétoises. Fortifications urbaines et défense du territoire en Crète aux époques classique et hellénistique* (Cahiers archéologiques de Paris I, n°3). Paris: Publications de la Sorbonne.

Coutsinas, N. 2018. A living countryside: changes in the rural occupation of eastern Crete from the Hellenistic to the Late Roman Period, in V. Di Napoli, F. Camia, V. Evangelidis, D. Grigoropoulos, D. Rogers and S. Vlizos (eds) *What's New in Roman Greece? Recent Work on the Greek Mainland and the Islands in the Roman Period, Proceedings of a Conference held in Athens, 8–10 October 2015* (*Meletemata* 80): 123–133. Athens: National Hellenic Research Foundation.

Coutsinas, N. 2020. Hellenistic Olous: connectivity and defence, in R. Cantilena and F. Carbone (eds) *Monetary and Social Aspects of Hellenistic Crete* (*Annuario della scuola archeologica di Atene e delle missioni italiane in Oriente*, Suppl. 8): 35–47. Florence: Scuola archeologica italiana di Atene.

Coutsinas, N. forthcoming. Itanos (Eastern Crete): A Greek city-state with a 'Mediterranean territory', in R. Da Vela, M. Franceschini and F. Mazzilli (eds) *Networks as Resources for Ancient Communities, Proceeding of the international conference EAA Virtual Annual Meeting (26th-30th August 2020)*. Tübingen: Publication of the Collaborative Research Centre SFB 1070 RESOURCECULTURES.

Coutsinas, N., M. Guy and A. Kelly. 2016. Kouphonisi (Greece): a briefly vibrant Roman harbourage between Crete and Africa, in M. Ghilardi (ed.) *Géoarchéologie des îles de la Méditerranée*: 333–344. Paris: CNRS éditions Alpha.

Coutsinas, N. and M. Guy. 2018. Kouphonisi (Grèce) : une étape incontournable entre la Crète et l'Afrique, in Y. Tristant and M. Ghilardi (eds) *Landscape Archaeology. Egypt and the Mediterranean World* (Bibliothèque d'étude 69): 191–204. Cairo: Institut français d'archéologie orientale.

Coutsinas, N., M. Katifori, K. Roussos and A. Argyriou. 2021. The settlement patterns of the Praisos region (East Crete) from the Classical to the Venetian periods, as revealed through the SettleInEastCrete Program. *Annuario della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente* 99.1: 420–442.

Coutsinas, N., M. Katifori, K. Roussos and A. Argyriou. forthcoming. The settlement patterns of the Ierapetra Isthmus (East Crete) from the Classical to the Venetian Periods, as revealed through the SettleInEastCrete Program. *Journal of Greek Archaeology*.

Davaras, C. 1974. Rock-cut fish tanks in eastern Crete. *Annual of the British School at Athens* 69: 87–93.

Davaras, C. 1980. Περιοδίεις. *Αρχαιολογικόν Δελτίον* 35, B2, *Χρονικά*: 526, pl. 328 α-β.

Davaras, C. 1997. The 'cult villa' at Makriyialos, in R. Hägg (ed.) *The Function of the 'Minoan Villa'. Proceedings of the eighth International Symposium at the Swedish Institute at Athens, 6–8 June, 1992* (Skrifter utgivna av Svenska Institutet i Athen. 4°, 46)*:* 117–135*.* Stockholm: Paul Åströms Forlag.

Empereur, J.-Y., A. Marangou and N. Papadakis. 1992. Recherches sur les amphores crétoises III. *Bulletin de Correspondance Hellénique* 116.2: 633–648.

Fenet, A. 2016. *Les dieux olympiens et la mer* (Collection de l'École française de Rome). Rome: Publications de l'École française de Rome.

Flemming N.C. and P.A. Pirazzoli. 1981. Archéologie des côtes de la Crète. *Histoire et Archéologie* 50: 66–81.

Francis, J. and A. Kouremenos (eds) 2016. *Roman Crete: New Perspectives*. Oxford: Oxbow Books.

Gaignerot-Driessen, F. 2011. The frieze from the Temple of Dictaean Zeus at Palaikastro, in M. Andreadaki-Vlazaki and E. Papadopoulou (eds) *Πεπραγμένα του Ι' Διεθνούς Κρητολογικού Συνεδρίου (Χανιά, 1–8 'Οκτωβρίου 2006)*, Vol. A5: 425–436. Chania: Philologikos Syllogos 'O Chrysostomos'.

Gallimore, S. 2011. An Island Economy: Ierapetra and Crete in the Roman Empire. Unpublished PhD dissertation, University at Buffalo, State University of New York.

Gallimore, S. 2016. Crete's economic transformation in the Late Roman Empire, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 175–188. Oxford: Oxbow Books.

Gallimore, S. 2017a. Food surplus and archaeological proxies: a case study from Roman Crete. *World Archaeology* 49.1: 138–150.

Gallimore, S. 2017b. Abandonment and assimilation in the Roman period, in L.V. Watrous, D.M. Buell, E. Kokinou, P. Soupios, A. Sarris, S. Beckman, G. Rethemiotakis, L.A. Turner, S. Gallimore and M.D. Hammond, *The Galatas Survey: The Socio-Economic and Political Development of a Contested Territory in Central Crete during the Neolithic to Ottoman Periods* (Prehistory Monographs 55): 105–117. Philadelphia: INSTAP Academic Press.

Gallimore, S. 2018. The relationship between agricultural production and amphora manufacture on Roman Crete. *Journal of Roman Archaeology* 31: 373–386.

Gallimore, S. 2019. An island in crisis? Reconsidering the formation of Roman Crete. *American Journal of Archaeology* 123.4: 589–617.

Greco, E., Th. Kalpaxis, A. Schnapp and D. Viviers. 1996. Travaux menés en collaboration avec l'École française d'Athènes en 1995. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 120.2: 941–952.

Greco, E., Th. Kalpaxis, A. Schnapp and D. Viviers. 1997. Travaux menés en collaboration avec l'École française d'Athènes en 1996. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 121.2: 809–824.

Greco, E., Th. Kalpaxis, A. Schnapp and D. Viviers. 1998. Travaux menés en collaboration avec l'École française d'Athènes en 1997. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 122.2: 585–602.

Greco, E., Th. Kalpaxis, A. Schnapp and D. Viviers. 1999. Travaux menés en collaboration avec l'École française d'Athènes en 1998. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 123.2: 517–532.

Greco, E., Th. Kalpaxis, N. Papadakis, A. Schnapp and D. Viviers. 2000. Travaux menés en collaboration avec l'École française d'Athènes en 1999. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 124.2: 547–559.

Greco, E., Th. Kalpaxis, N. Papadakis, A. Schnapp and D. Viviers. 2001. Travaux menés en collaboration avec l'École française d'Athènes en 2000. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 125: 637–644.

Greco, E., Th. Kalpaxis, N. Papadakis †, A. Schnapp and D. Viviers. 2002. Travaux menés en collaboration avec l'École française d'Athènes en 2001. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 126: 577–582.

Greco, E., Th. Kalpaxis, A. Schnapp and D. Viviers. 2003. Travaux menés en collaboration avec l'École française d'Athènes en 2002. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 127: 546–553.

Guizzi, F. 2001. *Hierapytna, storia di una polis cretese dalla fondazione alla conquista romana* (Atti della Accademia nazionale dei Lincei, Classe di scienze morali storiche e filologiche, Memorie Serie 9, Volume 13, Fasciculo 3). Rome: Accademia nazionale dei Lincei.

Guizzi, F. and V.E. Stefanaki. 2011. Le synœcisme de Larisa par Hiérapytna en Crète orientale. Essai de mise en perspective d'après les nouvelles données archéologiques, in M. Andreadaki-Vlazaki and E. Papadopoulou (eds) *Πεπραγμένα του Ι' Διεθνούς Κρητολογικού Συνεδρίου (Χανιά, 1–8 Οκτωβρίου 2006)*, Vol. A4: 273–288. Chania: Philologikos Syllogos 'O Chrysostomos'.

Haggis, D. 1996. The port of Tholos in eastern Crete and the role of a Roman horreum along the Egyptian corn route. *Oxford Journal of Archaeology* 15.2: 183–209.

Haggis, D. (ed.) 2005. *Kavousi* I. *The Archaeological Survey of the Kavousi Region* (Prehistory Monographs 16). Philadelphia: INSTAP Academic Press.

Harrison, G.W.M. 1991. Changing patterns in land tenure and land use in Roman Crete, in G. Barker and J. Lloyd (eds) *Roman Landscapes, Archaeological Survey in the Mediterranean Region* (Archaeological Monographs of the British School at Rome 2): 115–121. London: British School at Rome.

Harrison, G.W.M. 1993. *The Romans and Crete*. Amsterdam: Adolf M. Hakkert.

Hood, S., P. Warren and G. Cadogan. 1964. Travels in Crete 1962. *Annual of the British School at Athens* 59: 50–99.

IC III = Guarducci, M. 1942. *Inscriptiones Creticæ – Opera et Consilio Friderici Halbherr Collectæ III Tituli Cretæ orientalis*, R. Istituto di archeologia e storia dell'arte. Rome: La Libreria dello Stato.

Kalpaxis, Th., A. Schnapp and D. Viviers. 1995. Rapport sur les travaux menés en collaboration avec l'École française d'Athènes en 1994. Itanos (Crète orientale). *Bulletin de Correspondance Hellénique* 119.2: 713–736.

Kelly, A. 2004. The Roman Aqueducts and Bathhouses of Crete. Unpublished PhD dissertation, Trinity College Dublin.

Kelly, A. Forthcoming. A Roman bathing block at Myrtos: the 1973 season, in P. Karanastasi, A. Tzigounaki and Ch. Tsigonaki (eds) *Αρχαιολογικό έργο Κρήτης 5 (Ρέθυμνο, 21–24 Νοεμβρίου 2019)*.

Kritzas, Ch. 2006. Νέο τεμάχιο της συνθήκης Λυττίων και Ολουντίων του 111/10 π.Χ. (IC I, XVIII, 9) από τη Χερσόνησο, in Th. Detorakis and S. Papadaki-Oekland (eds) *Πεπραγμάνα τοῦ Θ' Διεθνοῦς Κρητολογικοῦ Συνεδρίου (Ἑλούντα, 1–6 Ὀκτωβρίου 2001)*, Vol. A5: 267–272. Heraklion: Society of Cretan Historical Studies.

Marangou-Lerat, A. 1995. *Le vin et les amphores de Crète de l'époque classique* à *l'époque impériale* (*Études crétoises* 30). Thessaloniki: Fondation Fany Boutari.

Marangou, A. 2004. Alexandrie: une destination pour le vin crétois, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. I: 1029–1038. Padua: Bottega d'Erasmo, A. Ausilio.

Mariani, L. 1895. Antichità Cretesi I. *Monunmenti Antichi* 6: 153–334.

Moody, J. 2016. The Roman climate in the southwest Aegean: was it really different?, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 59–82. Oxford: Oxbow Books.

Mourtzas, N.D. 2012. Fish tanks of eastern Crete (Greece) as indicators of the Roman sea level. *Journal of Archaeological Science* 39: 2392–2408

Mourtzas, N., E. Kolaiti and M. Anzidei. 2016. Vertical land movements and sea level changes along the coast of Crete (Greece) since Late Holocene. *Quaternary International* 401: 43–70.

Mourtzas, N. and E. Kolaiti. 2017a. Shoreline reconstruction of the submerged Minoan harbour morphology in the bay of Kato Zakros (Eastern Crete, Greece). *Journal of Archaeological Science: Reports* 12: 684–698.

Mourtzas, N. and E. Kolaiti. 2017b. Geoarchaeology of the Roman harbour of Ierapetra (SE Crete, Greece). *Méditerranée* [Online], [http://journals.openedition.org/mediterranee/7965] (last accessed 25.04.2021).

Nowicki, K. 2000. *Defensible sites in Crete, c. 1200–800 B.C. (LM IIIB/IIIC through Early Geometric)* (Aegaeum 21). Liège / Austin: Université de Liège, Histoire de l'Art et Archéologie de la Grèce Antique/University of Texas, Program in Aegean Scripts and Prehistory.

Papadakis, N.P. 1979. Αρχαιότητες και μνημεία ανατολικής Κρήτης. *Αρχαιολογικόν Δελτίον* 34, Vol. B2, *Χρονικά*: 406–409, pl. 217δ.

Papadakis, N.P. 1980. ΚΔ' Εφορεία Προϊστορικών και κλασικών αρχαιοτήτων. *Αρχαιολογικόν Δελτίον* 35, Vol. B2, *Χρονικά*: 524–525, pl. 327.

Papadakis, N.P. 1983. Κουφονήσι: η 'Δήλος' του Λιβηκού. *Αρχαιολογία* 6: 58–65.

Papadakis, N.P. 1986a. Κουφονήσι Σητείας. *Αρχαιολογικόν Δελτίον* 41: 228–231.

Papadakis, N.P. 1986b. *Ierapetra: Bride of the Libyan Sea. A Historical, Archaeological and Cultural Guide*. Ierapetra: Ierapetra Town Council.

Papadakis, N.P. 1986c. *Άγιος Στέφανος και Μακρύ Γιαλός, Πολιτιστικός οδηγός. A Cultural Guide to Ayios Stephanos and Makry Yialos*. Ayios Stephanos: n.p.

Papadopoulos, G.A. 2011. *A Seismic History of Crete. The Hellenic Arc and Trench – Earthquakes and Tsunamis: 2000 BC – 2011 AD*. Athens: Ocelotos.

Pazarli, M., E. Livieratos and Ch. Boutoura. 2007. Road Network of Crete in Tabula Peutingeriana, *e-Perimetron* 2.4: 245–260. [http://www.e-perimetron.org/Vol_2_4/Pazarli_et_al.pdf] (last accessed 25.04.2021)

Perlman, P. 1995. Invocatio and imprecatio: The hymn to the greatest kouros from Palaikastro and the oath in ancient Crete. *Journal of Hellenic Studies* 115: 161–167.

Pirazzoli, P.A. 2004. Tremblements de terre et mouvements verticaux du sol en Crète à l'époque romaine et protobyzantine, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. III.2: 1207–1216. Padua: Bottega d'Erasmo, A. Ausilio.

Pomey, P. 1997. *La navigation dans l'antiquité* (Collection Méditerranée). Aix-en-Provence: Édisud.

Sanders I.F. 1982. *Roman Crete. An Archaeological Survey and Gazetteer of Late Hellenistic, Roman and Early Byzantine Crete*. Warminster: Aris and Phillips Ltd.

Sofianou, Ch. 2009. ΚΔ' Εφορεία Προϊστορικών και Κλασικών Αρχαιοτήτων. *Αρχαιολογικόν Δελτίον* 64, B2, *Χρονικά*: 923–924.

Sofianou, C. 2020. Το έργο της Εφορείας Αρχαιοτήτων Λασιθίου κατά την τριετία 2014–2016, in P. Karanastasi, A. Tzigounaki, and C. Tsigonaki (eds) *Αρχαιολογικό έργο Κρήτης 4: πρακτικά της 4ης συνάντησης, Ρέθυμνο, 24–27 Νοεμβρίου 2016*, Volume A: 3–15. Rethymno: Ministry of Culture and Sports, Ephorate of Antiquities of Rethymnon, Department of History and Archaeology, School of Philosophy, University of Crete.

Sporn, K. 2002. *Heiligtümer und Kulte Kretas in klassischer und hellenistischer Zeit* (Studien zu Antiken Heiligtümern 3). Heidelberg: Verlag Archäologie und Geschichte.

Spratt, T.A.B. 1854. Extract of a letter from Captain Spratt, R.N., on Crete. *The Journal of the Royal Geographical Society of London* 24: 238–239.

Spratt T.A.B. 1865. *Travels and Researches in Crete*. London: John Von Voorst.

Stefanakis, M.I. 2010. Western Crete: from Captain Spratt to modern archaeoseismology, in M. Sintubin, I., S. Stewart, T.M. Niemi and E. Altunel (eds) *Ancient Earthquakes* (Geological Society of America Special Paper 471): 67–79.

Stefanaki, V.E. 2021. *Hiérapytna, Histoire et monnayage jusqu'à la conquête romaine* (Kerma V). Ioannina: Lydia Lithos, Society for the Study of Numismatics and Economic History.

Stiros, S.C. and S. Papageorgiou. 2001. Seismicity of western Crete and the destruction of the town of Kisamos at AD 365: archaeological evidence. *Journal of Seismology* 5: 381–397.

Sweetman, R.J. 2013. *The Mosaics of Roman Crete. Art, Archaeology and Social Change*. Cambridge: Cambridge University Press.

Tsipopoulou, M. 2012. *Petras, Siteia – 25 Years of Excavations and Studies* (Monographs of the Danish Institute at Athens 16). Athens: The Danish Institute at Athens.

Tsipopoulou, M. (ed.) 2016. *Petras, Siteia* I. *A Minoan Palatial Settlement in Eastern Crete. Excavations of Houses I.1 and I.2* (Prehistory Monographs 53). Philadelphia: INSTAP Academic Press.

Van Effenterre, H. and M. Bougrat. 1969. Les frontières de Lato. *Κρητικά Χρονικά* 21: 9–53.

Viviers, D. 1999. Economy and territorial dynamics in Crete from the Archaic to the Hellenistic period, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger Althistorische Beiträge und Epigraphische Studien 29): 221–233. Stuttgart: Franz Steiner Verlag.

Viviers, D. 2006. Itanos. Archéologie d'une cité crétoise, in *L'archéologie* à *l'Université Libre de Bruxelles (2001–2005) Matériaux pour une histoire des milieux et des pratiques humaines* (Études d'archéologie 1): 97–108. Bruxelles: CReA 2006 <http://crea.ulb.ac.be/Itanos.html> (last accessed 25.04.2021)

Vogeikoff-Brogan, N. 2004. The late Hellenistic period in east Crete, in L. Preston, M. Day, S. Mook and J.D. Muhly (eds) *Crete Beyond the Palaces* (Prehistory Monographs 10): 213–220. Philadelphia: INSTAP Academic Press.

Vogeikoff-Brogan, N. 2011. Domestic assemblages from Trypitos, Siteia: private and communal aspects, in K.T. Glowacki and N. Vogeikoff-Brogan (eds) *ΣΤΕΓΑ. The Archaeology of Houses and Households in Ancient Crete* (*Hesperia*, Suppl. 44): 409–419. Princeton: American School of Classical Studies at Athens.

Vogeikoff-Brogan, N. 2012. Hellenistic and Roman periods. Expansion of the isthmus in an international era, in L.V. Watrous, D.M. Buell, E. Kokinou, P. Soupios, A. Sarris, S. Beckman, G. Rethemiotakis, L.A. Turner, S. Gallimore and M.D. Hammond, *The Galatas Survey: The Socio-Economic and Political Development of a Contested Territory in Central Crete during the Neolithic to Ottoman Periods* (Prehistory Monographs 55): 81–93. Philadelphia: INSTAP Academic Press.

Vogeikoff-Brogan, N. 2020. 'The wild east': eastern Mirabello before and after 100 BC, in R. Cantilena and F. Carbone (eds) *Monetary and Social Aspects of Hellenistic Crete* (*Annuario della scuola archeologica di Atene e delle missioni italiane in Oriente*, Suppl. 8): 25–34. Florence: Scuola archeologica italiana di Atene.

Vogeikoff-Brogan, N. and St. Apostolakou. 2004. New evidence of wine production in east Crete in the Hellenistic period, in J. Eiring and J. Lund (eds) *Transport Amphorae and Trade in the Eastern Mediterranean: Acts of the International Colloquium at the Danish Institute at Athens, September 26–29, 2002* (Monographs of the Danish Institute at Athens 5): 417–427. Aarhus: Aarhus University Press.

Vogeikoff-Brogan, N. and N. Papadakis. 2004. Hellenistic houses and households in east Crete: the case of Trypetos, in B. Schmaltz and M. Söldner (eds) *Griechische Keramik im kulturellen Kontext, Akten des Internationalen Vasen-Symposions in Kiel vom 24.–28.9.2001*: 66–69. Munich: Scriptorium.

Watrous, L.V. 1982. *Lasithi. A History of Settlement on a Highland Plain in Crete* (*Hesperia*, Suppl. 18). Princeton: American School of Classical Studies at Athens.

Watrous, L.V., D. Haggis, K. Nowicki, N. Vogeikoff-Brogan and M. Schultz (eds) 2012. *An Archaeological Survey* of *The Gournia Landscape. A Regional History of the Mirabello Bay, Crete* (Prehistory Monographs 37). Philadelphia: INSTAP Academic Press.

Williams, D.F. 2003. Cretan wine in Roman Britain. *Journal of Roman Pottery Studies* 10: 26–31.

8.

Beside the Sea: Unravelling the Maritime Landscape of Hellenistic and Roman Crete

Michael J. Curtis

Introduction

The sea is an important part of daily life on any island and yet one of the most surprising features of Cretan archaeology is that we know so little about life beside the sea and the maritime traditions of the island's inhabitants in ancient times. Whilst it is possible to argue that this situation is marginally improved for the Hellenistic and Roman periods, there are still huge gaps in our knowledge and understanding, and far more research and investigation is needed before it is possible to recreate the maritime landscape of these times with any degree of certainty. The intention of this article is to begin a discussion on the maritime landscape Crete over a period extending from the 3rd century BC to the 2nd century AD. From the outset it is important to state that this is a very preliminary view and that undoubtedly as research and investigation progresses it will hopefully be possible to fill in some of the gaps in our knowledge and to present a fuller perspective of life beside the sea during these times. This view should also be considered as a personal perspective, but it is hoped that there is some food for thought here and that this will motivate others to join in and take this discussion further.

The maritime landscape of Hellenistic and Roman Crete comprises a combination of terrestrial and submerged sites scattered along the coastline, the evidence from which represents the close and developing relationship between the islanders and the sea over time. In a physical sense, the evidence of this relationship can be seen in remains of ports, harbours, anchorages, waterfronts, moles, and breakwaters, to which can be added an array of other structures and installations including ship sheds, warehouses and other storage buildings, and beacon platforms. The human element of this maritime landscape is represented in the settlements along the coastline and which range in size from small fishing communities to the larger Greek and Roman towns and cities, and to which, since they often have private harbours, can be added the Roman coastal villas, or *villae maritima*, which, as a group, have previously received little scholarly attention in the context of Crete.

The early travellers and the coast

A starting point in this discussion is to consider the contribution made by the early travellers towards our understanding of past maritime landscapes. It is evident from their narratives that, in some places, the ruins and monuments of Roman Crete survived, visible and abandoned in the surrounding landscape, for many centuries and that the early traveller accounts provide a valuable record of the deterioration and eradication of these sites from Venetian times onwards as they were were systematically robbed for their antiquities and for the reusable stone and brick. Parts of this Roman landscape even survived into the beginning of the 20th century, when it was still possible to see the remains of odd buildings and other features, but all too soon new threats emerged as a result of urban expansion and in the post-war era with the advancement of tourist development, which changed the character of the coastline, and which still is a very real threat today (**Figure 8.1**).

One of the earliest sources is that of the Florentine monk and geographer Cristoforo Buondelmonti, based on his journey around Crete in 1415–1418 (Cornelio 1755; Van Spitael 1981). It is apparent from Buondelmonti's itinerary that some of old harbour towns and landing places, such as Kissamos, Chersonissos, Matala and Hierapytna, continued to be used and visited for several centuries after the Byzantine period (Van Spitael 1981: 46–52). The attraction of these places was often the vast array of Roman structures that were still present in the landscape and which were frequently referenced in the reports and papers of the Venetian dukes and Proveditors. The publication of some of the extracts from these (dating to the period from 1538 to 1670) by the English architect Edward Falkener in 1852, and the papers of the Venetian physician, antiquarian and botanist Onorio Belli, with the drawings of the theatres that he had seen on his travels, amazed and

Figure 8.1. Drilling to create more berthing space within the modern harbour of Hierapytna poses a threat to the remaining fragments of the Roman imperial harbour and has destroyed the natural rock formation that was part of the entrance into the ancient harbour (photo by Michael J. Curtis).*

teased the 19th century antiquarian audience (Falkener 1854). Today it is possible to see Falkener's articles as influenced by the discoveries of the likes of Richard Pococke (1745), Robert Pashley (1837a; 1837b) and the contemporary survey work that was being undertaken on Crete at the time by Captain T.A.B Spratt, raising questions as to whether his extracts were intentionally tailored towards the research activity of the time.[1] It would be interesting to see if the advancement of archiving over the years has brought to light any other reports that might also contain useful information on ancient remains on the island.

The evidence presented by both Buondelmonti and Falkener indicates that many of the abandoned Roman coastal settlements stood alone in the landscape, reflecting movements in population inland and into larger coastal urban conurbations, a process that possibly might be linked with the increasing threat of incursions and attacks from Arab fleets along the coasts from the mid-7th century AD onwards (Detorakis 1994: 113; Falkener 1854). In the eyes of the early travellers, this was a landscape that was locked in time and one where the state of preservation was such that in places the architecture and antiquities lying amongst the ruins proved to be worthy of salvage and export, as highlighted by Belli in his report of the smaller of two theatres at Hierapytna where he says that 'the capitals and entablatures were of the most exquisite workmanship, many of which have been sent to Venice by His Excellency (the Proveditor-General)' (Falkener 1854: 12).

The majority of the 16th century manuscript extracts cited by Falkener focus on the ruins and antiquities of the urban hinterlands and show a coastal landscape that was littered with the remains of public buildings and large houses (1852: 272), theatres (1854: 12–3, 15, 26), amphitheatres (1852: 297, 1854: 14, 15) and aqueducts (1852: 274–275, 286, 1854: 16). Commentary on the actual harbours and any waterfrontage installations is rare and imprecise when it does occur, as can be seen in the description of the harbour at Hierapytna from one of the Donati collection manuscripts and which states 'the harbour, consisting of large stones, and consisting of three basins one within the other, may be seen beneath the water, was defended by a chain' (Falkener 1852: 272) — a statement that is vague enough to influence expectations and interpretations of the ancient harbour even today. The untold story in these accounts though is that whilst the Venetian period witnessed a resurgence in the construction of harbours and ship sheds around the island it also saw the emergence of large arsenals and fortifications which created a demand for building stone, for which the ancient remains were a readily available source, as evidenced by the destruction and removal of Roman remains from Knossos for the construction of the barracks and other buildings at Herakleion (Kotsonas 2016: 301).

The journal entries of Richard Pococke, who visited Crete in 1739 (Pococke 1745), Robert Pashley, who travelled around Crete in 1834 as an expert in Classical antiquities attached to a British Admiralty survey (Pashley 1837a; 1837b) and Captain Thomas Abel Brimage Spratt, who was engaged in hydrographic survey work on the island for the Admiralty between 1851 and 1859 (Spratt 1865a, 1865b, 1866), provide, without intent, a record of the changes that had, and which were, taking place in the Roman landscape and for of some monuments these accounts form the last testament to their existence.[2] Sadly neither Pococke or Pashley were particularly interested in the remains of

* The rights of the illustrated monuments belong to the Ministry of Culture and Sports (Law 4858/2021) and the Roman harbour remains fall under the jurisdiction of the Ephorate of Antiquities of Lasithi and the Ephorate of Underwater Antiquities. Ministry of Culture and Sports - Organisation for Management and Development of Cultural Resources (Hellenic Ministry of Culture and Sports/Hellenic Organisation of Cultural Development) (N.4858/2021).

[1] The footnote references in Falkener's work on Belli (1854: 15, 26) suggest that he was following Spratt's research with interest and that a source of his information was Spratt's letters that were being read out before the Geological Society. Spratt was not aware that his letters were being published and when he returned to England in 1856, he was surprised to find that his discoveries were already widely known (Deacon 1978: 62, n. 10). The publication of Falkener's research on Belli came shortly after Spratt had begun his surveying work on Crete (see Spratt's acknowledgment of this in 1865a: 260), and whilst this may seem to be a relatively minor technical point, it does affect the reading of Spratt's accounts of some of his visitations and discoveries in the period 1851–1853, for instance, as seen in his report of the smaller theatre at Hierapytna (Spratt 1865a: 262–263).

[2] See D. Moore's *Dawn of Discovery: The Early British Travellers to Crete* (2010) for a useful background on the journeys of Pococke, Pashley, and Spratt and their contribution to Cretan archaeology.

the harbours, in spite of Pococke landing at Kydonia and visiting Kissamos (1745: 245), Matala (1745: 250) and Lasaia (1745: 250), and Pashley visiting Kydonia (1837a: 12–17), Chersonissos (1837a: 268–270), Hierapytna (1837a: 271), Arvi (1837a: 275–276), Kissamos (1837b: 43–44), Phalasarna (1837b: 62–75), and Tarrha (1837b: 263–265). Pashley's account of his visit to Phalasarna in western Crete demonstrates how much of this isolated ancient Greek city and harbour survived relatively intact until the 19th century, with the state of preservation being such that he was able to walk amongst the ruins of this Classical-Hellenistic harbour city, observing the abandoned fortification walls and towers that enclosed the harbour in a similar fashion as Buondelmonti had done in 1415–1418 (Cornelio 1755, I: 87; Pashley 1837b: 69–75). Pashley makes no specific comment on the harbour works at Phalasarna though, leaving this, and an explanation as why this harbour was so far inland, to be taken up by Spratt (Spratt 1865b: 227–235). Spratt, on the other hand, was an experienced hydrographer with an interest in archaeology and geology, and in his charting of the coastline he meticulously documented the locations of both contemporary and ancient settlements along with the structural remains that he found, including harbours and installations, as can be seen in his description of the harbour and mole at Kissamos (Spratt 1865b: 218).[3] These provide an invaluable record for modern day research and investigation (Papadopoulos *et al.* 2012) and are complemented by his series of Admiralty charts of the Cretan coastline and a further published work entitled *Sailing Directions for the island of Candia or Crete* (1866), providing useful information of the coastline at the time from a mariner's perspective.

Whilst the accounts of the early travellers are an invaluable record to the landscape of past times what is often forgotten as we look back on them today is the fact that the coastal landscape was not frozen in time and that it was changing in between their visits. An example of this can be seen at Hierapytna, where view from the fort across the bay towards the eastern breakwater recorded by Onorio Belli in 1590 would have been vastly different to that seen by Capt. T. A. B. Spratt standing in exactly the same spot in 1852, as the coastline had changed its appearance with a rise in the sea-level causing some of the features seen in 1590 to disappear or, like the eastern mole, to become less prominent, whilst at the same time exposing some new features, such as a section of the Roman western quayside recorded by Spratt (1865a: 255–257).[4]

The emergence of the maritime landscape

The development of the maritime landscape of Hellenistic and Roman Crete can be traced back to at least the 5th century BC when specific trading points began to emerge around the coastline. At this time, the engagement in external trade or exchange would have been on a small scale, a seasonal activity and probably infrequent at times. The presence of Aiginetan coinage of the island is an indication that Crete was included in the early trading networks (Stefanakis 1999: 250–251), and there remains the possibility that the Aiginetans may well have established a trading point at Kydonia during the latter part of the 6th century BC (Stefanakis 1999: 251–253). Whilst there is currently no archaeological evidence to support this, it remains an interesting suggestion and would be in line with the development of commercial networks in the Eastern Mediterranean, and beyond at this time.[5] During these early developmental stages, there is no reason to expect trading to have been anything more than a casual activity, perhaps undertaken when the island hoppers stopped to replenish their food and water supplies before setting off on their onwards journeys.

Trade at this time was likely to have been fairly basic,[6] on such a small scale that some might struggle to classify this as trade and with little, if any, visibility in the landscape. It is evident though that some journeys to Crete may have been with a specific objective in mind and as can be shown in the external demand for Cretan cypress wood,[7] and possibly for herbs, especially medicinal species whose healing properties were well known, and which may have received additional attention through the overseas activities of Cretan mercenaries (Chaniotis 1999: 209–210; see also the article by A. Kouremenos in this volume). The natural landscape offered well suited locations for the coastal

[3] Spratt, who was made a Captain in 1855, returned to England at the end of 1863 for health reasons, retiring to Tunbridge Wells, Kent, where he wrote *Travels and Researches in Crete* (Spratt 1865a, 1865b). He remained on the Admiralty active list until 1870, being made a Rear-Admiral in 1872 and a Vice-Admiral in 1878 (Moore 2010: 37; Deacon 1978: 33). An interesting account of his naval life, the background to his work on Crete, and his role in the development of oceanography has been published by the National Maritime Museum (Deacon 1978).

[4] The change in the sea-level in this part of the island is attributed to the tectonic activity of 1604 AD (Mourtzas and Kolaiti 2017: 4).

[5] There is increasing evidence to suggest that Phoenicians were amongst the visitors to the island. The frequency of these visitations and whether they went beyond the occasional stop for the replenishment of food and fresh water whilst island hopping has yet to be determined (Shaw 1989; Stampolidis and Kotsonas 2006). The question as to whether there is a connection between the Phoenicians and the emergence of the early harbours remains unanswered for the time being (Hadjidaki 1988: 477–479).

[6] Stefanakis suggests that metal objects such as cauldrons and tripods continued to be used in conjunction with foreign currency in transactions until the beginning of the 3rd century BC when the *poleis* began minting their own coinage (1999: 250).

[7] Cretan cypress wood was a sought-after building material and there are examples of it being used in Athens and elsewhere in Greece during the 5th century BC and in later times (Chaniotis 1999: 209; Meiggs 1998: 200). It is possible that since this was a native woodland tree of the Lefka Ori mountains in western Crete (Rackham and Moody 1996: 60), that it was a cargo that was initially picked up on the north-south trade route.

trading hubs, some of which became the location of later *poleis*, with shallow waters, sandy beaches and promontories and inlets offering sheltered anchorage, facilitating the basic needs of the time. With a relatively sparse level coastal settlement until the late-4th/early 3rd century BC, it still would have been possible to find completely deserted stretches of coastline, with open access to fresh water.

Artificial harbours

In the 4th century BC, circumstances began to change, and the first artificial harbours are constructed. So far, the earliest and the only investigated example on the island, is at Phalasarna in western Crete, which is thought to have been completed in the period of 350-337 BC (Hadjidaki 2001: 155; Hadjidaki and Iniotakis 2000, for the ceramic evidence). It is unlikely that Phalasarna was the only artificial harbour by the time of its completion, with other possible contenders being at Kydonia, Olous, and Itanos.

The emergence of artificial harbours on the island was part of wider development process across the Greek world and which was reflective of the growing exchange of engineering ideologies and skills, facilitated, and to some extent fostered by, a network of trading routes and political alliances. The commentary of Pseudo-Skylax offers an early, if fragmentary, picture of the Cretan harbours, listing Kydonia, Lissa (Lissos), and Olous, besides that of Phalasarna (Pseudo-Skylax 47; Shipley 2011: 64–65).[8] There has been much discussion around Pseudo-Skylax's reference to Phalasarna and Kydonia as *λιμὴν κλειστός* and the implication that they were either closed or enclosed military harbours. The remains of the harbour at Phalasarna actually meet all of these criteria as it was enclosed, with the main basin located inland, and if necessary, it could probably have been closed off at the entry point to the harbour through the rock-cut channel that linked it with the sea and it was fortified, giving the appearance of being a military harbour (Hadjidaki 1988: 475–479). However, in the context of Crete it would be unwise to make any firm conclusions on the basis of the evidence from just one harbour, especially since the situation at Kydonia is far from clear with the Venetian and Ottoman landscape overlaying that of more ancient times, leaving the exact location, size, and nature of the early harbour here as being something yet to be determined.

This air of cautiousness is borne out by the results of a new survey project at Olous, in north-eastern Crete and which has re-opened the debate on Pseudo-Skylax's terminology. Early results from the survey of this harbour, which is now lies submerged in shallow waters, suggests that it may also have been fortified, though perhaps not the same extent as seen at Phalasarna (Coutsinas 2020; Simyrdanis *et al.* 2016). If this turns out to be the case, then it raises some interesting questions about the purpose and functionality of these harbours, their constructional date range, and their distribution around the island (on the assumption that there may be other examples yet to be discovered).

Phalasarna as a type site?

Having identified the presence of early harbours what else can be said about them? A starting point is to look at their locations and their use of the natural landscape. The investigations at Phalasarna suggest that location for the harbour may have been an old sea lagoon or an area of marshy ground (Hadjidaki 2001: 155). This natural environment would have made the extraction of waste soil easier, and possibly required less manpower and reduced the overall construction time. It has been suggested that the preparatory work, that of land clearance, began as early as the 6th century BC, though, so far, no structural work is reported as being of found of this early date and the completion date seems to be much later and in the 4th century BC (Hadjidaki 2001: 155–156). There can be little doubt that when it was completed it must have been an impressive sight and we can only imagine how it felt sailing or being pulled through the entrance channel to enter the inland basin and berth beside the sandstone and limestone block quays. It is also possible that a similar use of the natural landscape may have occurred at Itanos, where geophysical survey work has identified an old lagoon area that might have been associated with this harbour (Baika 2013c: 568–569).

Returning to Phalasarna, the harbour appears to be a self-contained unit, defended by both wall and towers which offered protection in case of the threat of a hostile attack and protecting the harbour from the natural elements.[9] On the northern side of the harbour basin, the urban area of the *polis* rose above the harbour along the rocky promontory of Cape Koutri. This urban area was separated from the harbour by a long wall, a feature that may be more pragmatic than defensive, influenced by early Greek thinking on the relationship between the *polis* and a harbour and the need to define this in a physical boundary (Bonner 2008).

[8] These harbours were located on either long-haul or inter-island shipping routes but given that the authorship and purpose of this work is far from clear (Shipley 2011: 9–13), it is not possible to draw any firm conclusions on the omission of other Cretan harbours such as Itanos and Hierapytna.

[9] On the basis of the published reports, the southwest tower faced on to the sea and was protected by an additional sea wall, which was so placed to bear the brunt of the erosion caused by the sea water erosion (Hadjidaki 1988: 471–472). This sea wall would have provided additional protection during the winter storms. The defensive wall which extended inland and at the back of the quayside would have provided an additional barrier to windblown sand/soil, which could have threatened the lifespan and operation of the harbour by adding to the problems of natural silting.

The interpretation of the term *λιμὴν κλειστός* used by Pseudo-Skylax, when taken with the architecture of the harbour at Phalasarna, is highly suggestive of that military functionality, but is our reading of this evidence correct or is it too convenient?

Taking a step back, at the time of its construction other inland *poleis* in this part of Crete, and beyond, were being fortified as a response the political landscape, the periods of instability across the island, and possibly as an expression of status. Since the harbour would have been a valuable asset the presence of defensive walls and towers does not appear at first glance to be too out of the ordinary. However, there are other reasons for raising these defences that merit some consideration beginning with the topography of the location, and the simple need for a physical barrier to protect the harbour basin from the natural elements. To this may be added the need to protect the vessels berthed and anchored in the harbour basin, along with their cargoes. There is little information on shipbuilding or shipyards on the island during 5th–1st centuries BC, but one of the objectives of the piracy, for which the island was well known, may well have been to secure sea-worthy vessels, and when captured these needed to be kept safe.[10] When put together it is possible to account for the fortifications without committing to this being a 'military' harbour, so what might its functionality have been and might this have been replicated in the other early harbours?

The harbour at Phalasarna was ideally located to benefit from both long-haul and inter-island shipping. Whilst the inter-island trading routes were still developing at the time of the harbour's construction and perhaps not reliable, the long-haul shipping the route from Cyrenaica to mainland Greece was more established and this passed along the western coast and right by Phalasarna. As sailors on this route are likely to have needed to stop when they reached Crete, the harbour must have been well placed to monopolise this, enabling the *polis* to engage in trade and exchange.[11] A second activity, which was clearly important to economy of the *polis*, has military overtones and was that of the supply of mercenaries to fight in overseas armies.[12] The practice of hiring Cretan citizen soldiers to fight in foreign armies is known to have taken place from the final quarter of the 5th century BC onwards. During the 4th and 3rd centuries BC, even though fighting was often a seasonal activity, the number of Cretan mercenaries serving overseas seems to have increased to the extent that it became a lucrative business for the city-states. A glimpse at how this process might have worked can be seen in the *c.* 200 BC treaty between Rhodes and Hierapytna (*IC* III.iii.3), which places a commitment on the alliance parties to not only provide mercenaries when the need arose, but also to guarantee their shipment (Russell 1942: 108). Our perception of the harbour has become rather muddled with the presentation and promotion of Phalasarna as a 'pirate port' (Frost and Hadjidaki 1990: 527), when, and as pointed out by P. de Souza, there is a total lack of evidence to support this supposition (1998: 115). It does, however, seem a possibility that Phalasarna was a regional mercenary embarkation point and, in this case the defensive walling would have been an additional safeguard for the stores of military equipment that may well have been stored within the harbour complex in preparation for shipping out with the contingents of soldiers. This interpretation adds a new perspective to the discovery of the small arsenal of catapult stones, and the occasional iron arrowhead found during the excavations, as the catapult stones could have been part of the military equipment and shipped as ballast with the mercenaries (Frost and Hadjidaki 1990: 517; Hadjidaki 1988: 472, 475 and fig. 15).

More investigation of other Cretan harbours is needed before it is possible to open a discussion on typologies, however the possibility that the fortified early harbours form a group in their own right and that they were associated with 'arms for hire' business is certainly something to merit consideration.

Natural and open harbours

The emerging coastal landscape of the 4th to 2nd centuries BC was interspersed with *poleis* and smaller settlements scattered along the shoreline. Over this period in time, possibly as many twenty *poleis,* of varying sizes were to be found in the coastal zone,[13] becoming an important influence on maritime activities. Their emergence reflects the renewed interest and confidence in locating main urban centres

[10] Shipbuilding materials would have been readily available on the island and taken with the maritime interests of the islanders it would be surprising if there was not a shipbuilding industry on the island, even if it was on a small scale. An interesting, if not intriguing, inscription from Delos dated to *c.* 157/6 BC describes how one Heraippas and his slave, Aristian, from Eleutherna leased a shipbuilding yard on Delos and which, as pointed out by Themelis, demonstrates that the role of the Cretans occasionally extended beyond that of being a maritime trading partner to being an active participant, if not investor, in part of the underlying infrastructure (2003: 18).

[11] The traditional view has been that there was limited contact and trade between Crete and the other areas of Greece during the 6th to 4th centuries (Hadjisavvas and Chaniotis 2012: 164); however, the operational date for this harbour and finds from other locations around the island and beyond suggest that there was far more maritime activity than previously thought during the 4th century BC.

[12] As an example, Livy records that in 172 BC some 3000 Cretans under the command of Susus of Phalasarna and Syllus of Knossos fought in the army of Perseus, King of Macedonia, in his war against Rome (Liv. 42.51). Whilst this number is likely to have been exaggerated, it serves to highlight the attractiveness and scale of fighting in foreign armies. Transportation of the mercenary soldiers may have needed the requisition of merchant vessels, or the use of ships captured through acts of piracy.

[13] Figure based the confirmed *poleis* listed in Perlman 2004.

Figure 8.2. The line of the 'keel-slot' on the northern ship shed slipway at Rethymnon (photo by Michael J. Curtis).*

closer to the sea, and unlike some of the early harbour city-states, it appears that few of these *poleis* were physically fortified (Coutsinas 2020: 42). Whilst more landscape research needed, topography was clearly an important consideration when it came siting of many of these *poleis*, with a preference for locating the centre of the urban areas on slightly higher ground from where a view over the sea and the surrounding land may have been possible. The separation of the urban area from the foreshore, or their harbour/waterfrontage, does not appear to have been a matter of concern, presumably as such an arrangement did not leave the urban area exposed and quite so vulnerable in the event of an attack, and the view over the sea offered by the raised ground would have given some visibility to incoming vessels in time for them to be met at the foreshore or harbour, and also to view any suspicious shipping.

Whether the territorial boundaries of the *poleis* extended beyond the shoreline to include the shallow coastal waters is an interesting discussion, and the presence of a small number of ship sheds might be an indication that some *poleis* did actively engage in patrolling the waters off their stretch of coast,[14] but there currently is no evidence to suggest that this was a widespread practice (**Figure 8.2**). Similarly, intra-island territorial conflicts of the 3rd and 2nd centuries BC and the increasing amount of piracy may have necessitated the siting of forts, watch towers or beacons along parts of the coastline. Their absence from our current perspective of this ancient coastal landscape is more than likely due to the fact that the possibility of their presence has previously not merited much attention in field surveys and research.

Not all *poleis* were located close to sea and some, whose territory included the coastline, established satellite

* The rights of the illustrated monuments belong to the Ministry of Culture and Sports (Law 4858/2021) and these archaeological remains fall under the jurisdiction of the Ephorate of Antiquities of Rethymnon and the Ephorate of Underwater Antiquities. Ministry of Culture and Sports - Organisation for Management and Development of Cultural Resources (Hellenic Ministry of Culture and Sports/ Hellenic Organisation of Cultural Development). (N.4858/2021).

[14] Examples of note have been recorded at Matala (Gerding 2013), Rhithymna (Baika 2013a), and Sitia/Trypetos (Baika 2013b).

outlets and trading points,[15] whilst the best option for other *poleis* who had no such access and which were totally landlocked, was to seek an arrangement with a neighbouring *polis* that had access to sea so that they too could participate in intra and inter island trading. Evidence of this can be seen in the close relationship that developed between Chersonissos and Lyttos (Gagarin and Perlman 2016: 43; Perlman 2004: 1155).

The opening of the 3rd century BC witnessed further changes to the maritime landscape in response to the developing nature of seaborne trade and commerce, which led to more stability in the trading process and increased visitations to the island. At this point, and even though the volume of Cretan exports was likely to have been relatively small, it is possible to see different types of maritime activity around the coastline:

i. **intra-island trade**: involving the exchange and trading of goods and produce along the coast within a specific territory or between allied city-states in different parts of the island. This was likely to have utilised small craft and been an all-year, weather dependent, activity, requiring little, if any, administrative process, with no essential requirement of berthing facilities.

ii. **inter-island trade**: engaging in trade and commerce as part of the external trading networks between the islands, the Greek mainland, and the Eastern Mediterranean. This may have initially been a seasonal activity, which extended beyond traditional sailing season over time as the networks became more established and the business of trading became more formalised. As the amount of trading increased, the availability of berthing or quayside facilities became an important consideration. It is probable that there is a chronological link between the development and implementation of harbour tax systems by the city-states and the emergence of more formalised harbours and waterfrontages, and which together formed part of a process that resulted in more centralisation of seaborne trading activities around the island.

iii. **long-haul trade**: the harbours, and anchorages[16] supporting this activity were located on the shipping routes across the Mediterranean as they passed by the island. They acted as important stopping off points primarily for the replenishment of food supplies and fresh water for the crew, or perhaps to shelter from storms, and if in a harbour, there was undoubtedly some advantageous trading that took place on both the outwards and return journeys. Whilst this category became more important after the 2nd century BC as the Roman Empire began to take shape, it is likely to have been relatively small scale until the last quarter of the 1st century BC. This has traditionally been viewed as a seasonal activity, but the longer route hugging the coastline could have extended the sailing season, over time it acquired an administrative process and whilst not essential, the availability of berthing facilities would have been beneficial.

iv. **multi-level trade** (ports): this level of operation is more complex and would have built-up over time as coastal trading became more reliable and frequent. Their involvement in trading activities (i), (ii) and (iii), would make the harbours at Phalasarna, Kydonia, Itanos and Hierapytna possible candidates. These harbours would have functioned as main trading centres, acting initially as distribution points for imported goods and produce, and later for exports, and linking in with the activities of local traders, like the *kapelos* (Hasebroek 1965: 1–3) on either a territorial or regional basis. This may well have been an all-year operation, requiring berthing facilities and possibly storage facilities.

Approaching the activities in this way helps in our understanding of the coastal landscape as these different categories were each in turn linked to different types and sizes of vessel which influenced the location and physical requirement at the harbour or landing point. An example of this working in practice can be seen at Chersonissos, where this northern coastal *polis* would fall into the dual category of being engaged in intra and inter-island trading. Here a natural, small, rocky promontory offered natural shelter and a safe anchorage, and the relatively shallow offshore waters would have aided the unloading or loading of cargo. Initially, whilst trade was at a relatively low level and infrequent, this arrangement would have probably been sufficient, then at some point, most likely in the first half of the 3rd century BC, the citizens of the *polis* took the decision to improve on this and invest in the construction of a stone quayside. This decision may have been prompted by the gradual increase in the number visitations each sailing season, which until the 1st century BC would have probably seen more imports than exports. With little published detailed information on Cretan wreck sites of the Hellenistic and early Roman periods, the Kyrenia shipwreck serves as a useful guide as to the type and draft of the Greek ships

[15] For instance, Amphimalla and Hydramia on the northern coast may have been trading points for the inland *polis* of Lappa (Cross 2011: 232 and 234–235; Perlman 2004: 1172–1173), Poros-Katsambas or Amnisos initially for the Classical and Hellenistic *polis* of Knossos (Gagarin and Perlman 2016: 42), and Stavromenos on the northern coast for Eleutherna (Gagarin and Perlman 2016: 43).

[16] It is possible, though unresearched, that inlets may have been used as winter anchorages, and with maintenance crew needing to be nearby this raises an interesting question as to whether there may have been temporary (seasonal) settlements.

Figure 8.3. A section of partly submerged quay/sea wall at Chersonissos (photo by Michael J. Curtis).*

that were engaged in inter-island trade and which might have visited Crete. Such vessels, with a draft of about 1.4 metres (Katzev 1981: 318), would have been able to anchor relatively close to the shore and the provision of a stone quayside gave all important dry storage space for incoming, outgoing goods and produce and space to undertake the necessary business transactions. More research is needed to help in our understanding of the extent, dating and sequencing of the Greek harbour works at Chersonissos, documented in the survey work of J. Leatham and S. Hood in 1955 (1958–1959: 269–270 and figs 2, 3) and T. Theodoulou for the Ephorate of Underwater Antiquities in 2010;[17] however, parts of these remains are still traceable in the modern landscape with a surviving section of the quayside/sea wall lying partly submerged to the east of the Roman harbour (**Figure 8.3**).

The development of waterfrontages and harbours like Chersonissos are undoubtedly linked to the wider process of economic change that was taking place within the *poleis* across the island. As seaborne visitations began to increase and became more regular, the application of taxes on traded goods was found to be an important source of revenue for the *poleis.* Whilst the movement of short-distance intra-island goods seems to have been for exempt for the most part (Guizzi 1999: 240), inter-island and long-distance trade was certainly not, and this may have had a bearing on decisions to improve the organisation of waterfronts and create designated areas that could be managed like a customs zone. Supporting evidence of the implementation of such financial measures can be seen in the 200–189 BC treaty between Gortyn and Lappa which references an *elliménion* (*IC* IV.186; Chaniotis 1996: 265–266, no. 31, ll. 15–18; Guizzi 1999: 240), a tax that generally covered harbour dues. It is possible that this was supplemented by another tax, a form of *tele emporika*, which was usually levied by the *poleis* themselves (Arnaud 2011: 64). It is important to remember that the implementation of customs taxes was only one part of the process and alongside this came the emergence of administering officials who were in control of the incoming and outgoing goods along with the other activities undertaken in the waterfrontage area. The evidence of this process is, for the most part, invisible today, but it is something that certainly should

* The rights of the illustrated monuments belong to the Ministry of Culture and Sports (Law 4858/2021) and these archaeological remains fall under the jurisdiction of the Ephorate of Antiquities of Heraklion and the Ephorate of Underwater Antiquities. Ministry of Culture and Sports - Organisation for Management and Development of Cultural Resources (Hellenic Ministry of Culture and Sports/Hellenic Organisation of Cultural Development). (N.4858/2021).

[17] See *Αρχαιολογικόν Δελτίον* 66 (2011), *Χρονικά*: 1129, for the account of the elongated structure observed by Theodoulou, whose appearance reflects the use of the core-and-veneer building technique (*emplekton*). Its location, seawards of the modern shoreline, is consistent the difference in the sea-level of Roman times (Davaras 1974: 91).

be expected to be seen in the Cretan harbours that were engaging in inter-island and long-haul shipping and which may have necessitated the harbour/quayside space to be organised in a specific way, something that was not necessarily a prerequisite for those solely engaged in intra-island trade and exchange, nor a part of the trading process that was particularly well suited an open beach arrangement.

Navigational markers and the coastline

The Hellenistic seascape contained natural features and large coastal structures that were frequently used as navigational markers. Our perception of these markers today, and the challenges of sailing around the island in times past, are heavily reliant on the information provided by Greek and Roman writers, such as Pseudo-Skylax, Strabo, Pliny, and Ptolemy. Most of these authors can be viewed as armchair geographers, writing from a distance, drawing on a variety of sources and only reporting the more well-known and most talked about landmarks. As a result, many of the lesser-known markers and local toponyms, which were very much a part of the island's maritime culture, are lost to us today.

The Cretan seascape, as indeed it is today, would have been dominated by the background views of the mountains and areas of higher ground and whilst this would have been a useful guide as to your rough location, additional navigational markers would have been needed. These would probably have been passed on from master to apprentice and from one generation of seafarers to another as part of the Cretan maritime culture. It was for the most part an oral tradition and we are only able to glimpse parts of it in the remaining accounts today.

One of the easier Hellenistic journeys to recreate is that of the long-haul sailing route from Cyrenaica to mainland Greece where it passes by the western end of Crete.[18] For sailors approaching Crete from Cyrenaica an important navigational marker was that of the natural land formation that marked the southwestern corner of the island and which came to be known as the Ram's Head (Pliny, *HN* 4.12.58) or Krioumetopon (Strabo 10.4.2; Roller 2018: 611).[19] In the modern landscape this is Cape Krios, and in the past it would have been an important marker not only indicating landfall after period of open sea, but also warning seafarers that they would shortly need to adjust their course to follow the western coast of Crete before heading out into the open sea on the other side of the island. There were also likely to have been some practical decisions to be made at this point in the journey for after several days at sea the island of Crete would have been a stopping place for the replenishment of the crew's fresh water and food supplies, and to attend to any matters of ship maintenance.[20] If cooking was not undertaken on board, the stop would have offered an opportunity for the crew to rest and enjoy a warm meal. There were several harbours and anchorages in this south-western corner of the island including Lissos,[21] Sougia, and Tarrha, all of which may have benefitted from these seasonal contacts and trade. The other option for seafarers would have been to sail on along the western coast heading for Phalasarna. Given the need to attend to the welfare of the crew it is hard to see that a stop-off on Crete would not have been considered. The western coastline, whilst being topographically different in Hellenistic times, probably only offered limited possibilities of anchorage, for instance modern Ormos Stomiou (ancient Rhamnous?)[22] or Cape Koutri, where the enclosed harbour of Phalasarna was located. Once past Cape Koutri and modern Cape Vouxa at the tip of the Gramvoúsa Peninsula (known in ancient times as either Korykos (Pseudo-Skylax 47) or Kimaros (Strabo 10.4.2; Roller 2018: 611)[23] the sea route followed a strait of shallower water in the direction of Antikythera and Kythira, both of which may have served as stopping points or places safety if the weather conditions deteriorated.

[18] This is most likely the route of the grain shipments from Cyrene to Athens, which started in the 5th century BC (Casson 1954: 168), and which may have been an important factor in the supply of grain during the crop failure of 330–326 BC, for which the coastal *polis* of Elyros and Hyrtakina, close to the harbour at Lissos, were amongst the Cretan city-states given grain by Cyrene (*SEG* 9.2.49).

[19] It is worth noting that Pseudo-Skylax refers to this marker as the Kriou Metopon promontory, which Shipley interprets as the 'Goats Brow' (2011: 126). There is some variance in the sailing times between Cape Krios and Cyrenaica to the south, with times ranging from one day and one night to two days and two nights (Coutsinas *et al.* 2016: 335).

[20] As noted by Rackham and Moody, there were significantly more year-round streams in the landscape in the past than are found today and fresh water would have been more readily available (1996: 41–43). The question of territorial waters is again a consideration and whether visiting vessels were just able to drop anchor and land to replenish water supplies without the risk of being challenged, or even being boarded.

[21] Listed in Pseudo-Skylax's commentary and where the remains of the small coastal *polis* seem concentrated on a small valley facing the sea (Perlman 2004: 1174–1175). The ancient shoreline has been uplifted here and there has only been limited research on the waterfrontage.

[22] Rhamnus is listed as a harbour by Ptolemy (3.17.2; Jones 2011: 26); Pliny, however, incorporates the name in his listing of inland settlements (*NH* 4.12.59). With a stream entering the bay here. the location would have offered both a safe anchorage and fresh water but given the rocky nature of this west coast shoreline access may have been difficult at times. Shipley makes the point that parts of this stretch of the coastline would have been difficult for sailors to have seen from a distance, so the bay could easily have been missed (2011: 126).

[23] Korycus or Corycus was a point from which distances to ports of the Peloponnese were often measured (e.g., Strabo 10.4.5; and the comment in Roller 2018: 613). There may have been a small settlement on the islet of Gramvoúsa (called Corycae by Pliny). Some ancient remains, undated, were observed by Buondelmonti in 1415 but these could not be found by Pashley on his visit in 1834 (1837: 73–75). The geographical location of this islet might have suited an early trading point and it is possible that the intervening occupation may have reused any building materials or concealed the earlier evidence.

Another natural navigational marker was the land formation at the northern eastern end of the island, modern Cape Sideros or Samonium in the commentaries (Strabo 10.4.2; Pliny, *HN* 4.12.58; Roller 2018: 611). This was another turning point where ships would either go on westwards along the northern coast or turn south to follow the eastern coastline before turning west to sail along the southern coast.[24] For larger vessels, especially the larger merchantmen of the Roman period, which utilised this southern route around the island, it is likely that they sailed on past south eastern corner of the island proceeding out to pass the islets of Leuke (modern Kouphonisi) and Chrysa (Chrysi) (Pliny, *HN* 4.12.61) on their southern side. These islets sat on the edge of the deeper water and before the change in sea-levels in this part of Crete, the land mass of the islet of Leuke would have been larger causing a narrowing in the channel between it and main island, and possibly making it difficult to navigate, particularly when there was a strong breeze or wind.[25] The rest of the journey along the southern coast could be challenging as this coast was prone to strong winds and squalls even in the summer months and there were also reefs, as highlighted in the problems encountered when the vessel carrying Paul the Apostle got into difficulties in a storm on this side of the island and needed to seek out safe anchorage or risk being wrecked (*Acts* 27.8–9).[26]

Natural features were not the only navigational markers and occasionally large coastal structures are also mentioned. One of these is the sanctuary of Diktynna in north western Crete (Pseudo-Skylax 47; Strabo 10.4.12; Pashley 1837b: 29–30; Spratt 1865b: 197–201), which was located on the eastern side of the Tityros peninsula, southeast of modern Cape Spatha (ancient Psakon). The sanctuary, which went through several periods of rebuilding, was situated above the sheltered anchorage of Menies Bay, and by the Roman period the temple and sanctuary were attracting visitors and worshippers from the whole of Greece. It is often forgotten that

Figure 8.4. A sea view of the acropolis at Kydonia (photo by Michael J. Curtis).

foot passengers also travelled on merchant vessels and presumably these visitors journeyed to nearby Kydonia from whence they were ferried across to the landing point beneath the sanctuary, where they could find accommodation for the duration of their stay and whilst they waited for passage on their return journey. The temple would have been visible from out sea, enhanced in the sunlight by the use of marble and white stone in its construction. A similar popular sanctuary also existed on the southern coast at Lebena, where the temple of Asklepios and medicinal springs attracted visitors and worshippers from around the island and beyond. Here, in Philostratus's account of *The Life of Apollonius of Tyana*, we learn that by Roman times the popularity of the sanctuary extended to Libya (4.34), which is not surprising considering its position on the southern coast and the availability of transport between the Crete and the ports and harbours on the Libyan coast. As Lebena was likely to have been one of the inter-island trading points, it might have been possible to undertake the journey without changing vessels, and the presence of possible accommodation buildings at Lebena suggests a similar scenario to that at the Diktynna.[27] Philostratus in his commentary (4.34) also reiterates an interesting old mariner's tale, providing a rare glimpse of the local maritime culture in the process as he describes the origins of the ancient name of Lebena and its association to the physical appearance of the headland to one side of the harbour, which was likened to be in the shape of a lion as it jutted out into the sea (Spratt 1865a: 349–353).[28]

There would have also been smaller and less prominent landmarks which would have stood out in the coastal landscape and which may well have been used as

[24] This landfall is mentioned in the account of the journey of Paul the Apostle as the merchantman on which he was travelling from Alexandria to Rome changed direction to follow the eastern coast (*Acts* 27.7). There were also dangerous reefs in this area as can be seen in a 1st–2nd century AD wreck lying off the coast (Coutsinas *et al.* 2016: 336).

[25] The sea-level along the stretch of the coast at Hierapytna has risen an average of 1.20m since Roman times (Mourtzas 2012: 2393).

[26] The traditional view has been that the sailing season ran from the end of May to September, with some leeway for two months either side (with the accompanying risks), and when the weather was more reliable, with a clearly visible night sky for viewing of the stars that were important for navigation (Beresford 2012: 9; Casson 1973: 270–271). However, Beresford has suggested that climatic diversity may have led to more variation in the extent of the sailing season, perhaps favouring earlier starts and later sailings in some parts of the Mediterranean (2012: 16). Adherence to the traditional sailing season would certainly make sense for open water voyages, like those from Cyrenaica to Crete, but perhaps less so for those based on island hopping, such as inter-island trade. In the context of Crete, not all the natural harbours or anchorages were usable in the winter months due to their exposure to wind and currents.

[27] It seems reasonable to assume that many of the travellers from overseas would have been of the elite class, travelling with their own servants who would have taken care of their personal needs, organising the food and wine for the journey, and being tasked with visiting the harbour/quayside to secure passage on vessels (Casson 1994: 153–155).

[28] Cape Kefala, or in ancient times Cape Leon, was quite a conspicuous headland offering sheltered anchorage on the lee side to a depth of 18 to 22 metres (Spratt 1866: 23).

location markers, such as the temple of Britomartis at Chersonissos (Strabo 10.4.14; Stillwell *et al.* 1976: 221), and the rocky outcrops that served as the acropolises for the *poleis* of Rhithymna and Kydonia (**Figure 8.4**), and which in the latter case might have acted as guide into the enclosed harbour mentioned by Pseudo-Skylax (47; Shipley 2011: 64). All of these landmarks would, however, have sat relatively low on the horizon when viewed from the sea.

Sailing along the southern coast

The character of the Hellenistic southern coast was, like it is today, very different in places to the northern coast and whilst this did not impede the development of trading points, the topography, the presence of reefs, shoals, and the exposure to winds and strong currents influenced the location of coastal settlements and their accessibility from the sea.[29] That said, this did not mean that this side of the island was inhospitable nor that it was any less involved in maritime activities than seen along the northern coast.

The pace of modern urban and tourist development along this coast has been much slower than in other parts of the island, thus reducing the need for responsive archaeological investigations. The exception is urban conurbation of Ierapetra, which has seen a rapid and extensive expansion since the beginning of the 20th century and where a significant part of the modern town overlies the Roman Imperial city. There is little doubt that our understanding of the development of the southern coastline during the 4th to 1st centuries BC is more fragmentary than perhaps would be wished for, and that we currently have little perspective of harbour and waterfrontage installations along this coastline. This is due to a series of different factors — later harbour works being built on top of the earlier ones, the effects of tectonic activity and of eustatic change — but, as many published accounts have shown, the evidence is there but has yet to be properly investigated, recorded, and published. However, the pre-Roman ceramic evidence from Sphakia adds further weight to the argument that external trading took time to develop and that the initial focus on seaborne intra-island trading remained important through to the end of the 1st century AD (Francis 2017: 513).[30]

Turning to the south-eastern end of the island, where the *poleis* of Itanos and Hierapytna were powerful political entities, it is likely early harbours that both of these *poleis,* which had close ties to Egypt and Rhodes, were the locations of early harbours that also served as embarkation points for mercenaries. Whilst the location of the *polis* at Itanos is known, there is still much to learn about its harbour (Baika 2013c: 568–569) and a similar situation exists Hierapytna, where the centre of the Greek *polis* and location of its harbour has also not been confirmed with any certainty. A relatively recent study by S. Gallimore of some of the ceramic evidence from excavations within what is thought to have the vicinity of the Hellenistic urban area at Hierapytna has provided a useful pottery sequence which seems to indicate that external trade along this part of the coast remained at relatively small scale until the 2nd century BC (Gallimore 2015). This timing is interesting in the context of the southern coast as it is around the time when there were changes in the shipping routes as the focus shifted from Athens and mainland Greece to Rome, bringing more traffic along the southern side of the island and heralding the start of a change in the fortunes of some of the settlements along it.[31] Even with trading at a low level, there was sufficient business to provide revenue for the city-states, as can be seen in the early 3rd century BC treaty between Praisos and Stalai, a coastal *polis* and dependency of Praisos situated to the east of Hierapytna (*IC* III.vi.7 = *SIG* 524; Perlman 2004: 1187). This treaty portrays Stalai as fishing harbour, engaged in the sourcing and processing of murex shells in addition to other trading activities. The treaty indicates a surprising amount of organisation for such a small harbour, and once more there is mention of the application of harbour taxes. The treaty also offers a rare insight into the governance placed on citizens who themselves took to sailing beyond Crete, including for voyages to Delphi and Olympia, with information on the rate of daily pay that could be expected when sailing on city-state business (Viviers 1999: 225–226).

Sailing westwards beyond Hierapytna, the next harbour in the 3rd century BC landscape would have been Lebena, which aside from its medicinal springs and renowned sanctuary, was one of two trading outlets for the inland *polis* of Gortyn, the other outlet being Matala to the west (Strabo 10.4.11).[32] There has been little study of the waterfrontage at Lebena, but it lay within a sheltered cove that afforded good anchorage (Spratt 1866: 23). This situation seems vastly different to that found at Matala, which initially may have been nothing more than a landing place in Hellenistic

[29] The dangers posed by reefs can be seen in the Kalóyeri reef, located to the west of Hierapytna and which extended seawards for nearly one mile (Spratt 1866: 22).

[30] It is possible that a small number of imported amphorae found at the trading points/harbours may be related to the business of shipping as opposed to trading. Supplies of water and wine for the journey would have been carried in amphorae, which were possibly re-used, and empty vessels would have taken ashore for refilling with water, where they may even have been exchanged for filled amphorae. Whilst the trading networks were developing it is possible that surplus wine amphorae were intentionally carried to be used in exchange for food or even fresh water, and other services/products.

[31] Note G. W. M. Harrison's apt reference to Crete as a 'coaling station' on the Egyptian grain route (2011: 56).

[32] Perlman suggests that Matala was an outlet for the inland *polis* of Phaistos in the Hellenistic period (2004: 1177), the situation changing perhaps in the aftermath of the destruction wrought upon Phaistos by Gortyn *c.* 150 BC (Perlman 2004: 1180).

times and was more exposed and prone to high seas during a west wind that would have probably made in inoperable at times (Shaw 2006: 53). Here there is also a rock-cut slipway of possible Hellenistic/Roman date in the south-east corner of the bay at Matala (Gerding 2013),[33] suggesting that there may have been a need for naval patrols in this part of the coastline. The presence of a naval station here may not be so out of the ordinary given that several of the known and identified *poleis* in this part of the island are fortified, including possibly Matala itself (Coutsinas 2013: 427–428). The next *polis* in a westwards direction, that of Bionnos, has surrounding fortification walls that are interspersed with towers and which seem to have been constructed between the 5th to 3rd centuries BC,[34] and fortifications have also been noted at the inland *polis* of Hyrtakina, further along the coast beyond Lissos (Coutsinas 2013: 440; Perlman 2004: 1166–1167). Since some of the *poleis* are clearly early foundations, the practice of fortifying the urban areas may be nothing more than a response to the island-wide political environment and instability of the time, but the possible presence of forts along or near to the coast may well be indicative of other security concerns that we have yet to fully understand.[35]

In sailing along the southern coast, it was also important to know the location of secure anchorages, especially in times of strong winds or sea breezes. This is the situation played out in the journey of Paul the Apostle as the vessel he was on headed for the safety of 'Fair Havens' (Kaloi Limenes) (*Acts* 27.8), a seasonal anchorage that was unsuitable in the winter months (Spratt 1866: 23–24).[36] Another anchorage that was used over time lay off the coast at Kommos, not far from Matala in the Messara Gulf. This was a stretch of coastline with maritime associations extending back to the Bronze Age, and was the site of a Greek rural sanctuary, the finds from which show that foreign visitors frequently came and worshipped here whilst passing by on their journeys (Shaw 2006: 41–50). The finds reveal an interesting picture of trade along this coast, including possible visitations by Phoenician mariners (Shaw 2006: 43). The gradually decreasing sandy bottom, easily accessible shores with the availability of fresh water from the Lethaios river nearby (modern Geropotamos; Strabo 10.4.11) and clear visibility of any approaching danger made the coastline around Kommos a good summer season anchorage, and it is still used as this today.

Roman interests

The surviving narrative of the early Roman interventions in the run-up to the invasion and conquest of Crete are predominantly concerned with political mediations and the deteriorating relationship between some of the *poleis* and Rome. This narrative is tainted with the elitism of the authors, who are presumably writing for a specific target audience. It is hard to believe that during this time the ever-watchful eye of Rome was not considering other objectives with regards to the island, but if it was, then this was unlikely to have of much literary interest. As the 2nd and first quarter of the 1st century BC progressed, it is possible to see gradual change taking place not only along the Cretan coastlines, but throughout Cretan society and in the economy, and for which the increasing amount of external contact was an important factor and influence. In this environment, it would have been relatively easy for a Roman strategist to have assembled a reasonably good dossier on the island's maritime activities, its strengths and weakness, and to assess the island's potential. In spite of the uncomplimentary picture painted of the Cretans and the island by Roman writers it is hard to believe that the strategic value of the island had not registered in Roman minds.

The geographical position of the island of Crete meant that it was essentially an entrepôt (Sweetman 2013: 12–13) — important to journeys, north-south, east-west — where sailors could stop and replenish their food supplies. To the new generation of larger Roman merchantmen sailing across the Mediterranean from Egypt or Cyrenaica, Crete was, as it had been over the previous centuries, an important stopping point, even if it was only for a short time, and for those merchants or traders involved in inter-island trading or tramp trading, Crete was beginning to become an interesting marketplace where the prospects for selling and buying goods and produce must have been good.[37] For Rome, and on top of this at fiscal level, there was the added bonus that the harbours of Crete offered the prospect

[33] Due to land subsidence the present day sea-level at Matala is almost 2 metres below that of Roman times (Gerding 2013: 389, 391).

[34] The harbour at Bionnos does not appear to have been of any significant size and may have been just a landing point/coastal trading centre with access to fresh water if needed (Hood and Warren 1966: 173–174; for the dating of the fortifications see Coutsinas 2013: 434–435).

[35] A possible, though unsubstantiated, fort may have existed further along the coast at Palaiochora (ancient Kalamydi) (Coutsinas 2013: 368; Hood 1967: 48–49). The Cretan harbours in western Crete seem to have been under threat from internal inter-state conflicts throughout the 2nd century BC. In 184 BC, Kydonia had occupied Phalasarna (Hadjidaki 2001: 157), and in ca 144/3 BC Eleutherna and Lato came to a reciprocal arrangement for the protection of fortresses and harbours (*IC* I.xvi.17, ll. 14–20) and made an alliance with Aptera for the same purpose (Themelis 2009: 55).

[36] According to D. J. Blackman and K. Branigan, the bay at Kaloi Limenes was sheltered from the sudden north winds but less so from the south-easterly winds of the winter months. Whilst they found no evidence in support of their being an ancient harbour at Kaloi Limenes, the presence of possible ancient harbour works at Lasaia, a little to the east, along with the remains of a sizeable settlement here suggests that this might have served as a harbour for ships anchoring along this stretch of the coastline (1975: 24–25 and 28–32).

[37] Casson makes the point that there may have been changes in the grain route from the eastern Mediterranean to the advantage of Crete after the demise of Delos following the attacks by the forces of Mithridates VI in 88 and 69 BC (Casson 1984: 80).

of good financial returns from harbour dues. The increasing maritime preoccupation of the islanders with piracy may have been a convenient reason to seize control of the island but it is also possible to argue that this was a strategic move not only to safeguard this part of what was becoming an important supply route, but also to ensure that Rome enjoyed some of the financial returns seen with the increased use of its ports and harbours.

Campaign and conquest

The maritime detail of the Roman military expedition in 71/72 BC and the campaign that followed in 69 BC is often forgotten. There seems to be general agreement that the established sailing route from Cyrenaica to the Peloponnese was used in these military operations, but the point of their departures is not known. One possible harbour, that of Gythion in Laconia, was suggested by I. F. Sanders in the context of the 69 BC campaign and as this was quite a busy shipping route it is likely that rumours of a fleet mustering are likely to have been carried far and wide, reaching the shores of Crete well in time for vessels from different parts of the island to assemble as a single opposing force and engage with Marcus Antonius out at sea. The fact that this engagement took place off the north-western coast supports the theory that the small fleet of vessels had sailed south from the Peloponnese. The question is whether, from a military perspective, Q. Caecilius Metellus in 69 BC would have chosen to use the same approach to the island, given the fate that befell the previous expedition? The more widely accepted view, set out by Sanders, is that he did and that he landed at Kissamos,[38] to the west of Kydonia and the scene of the first documented military engagement (App. 5.6.2). However, it is equally possible that Metellus and his fleet would have approached the island from the south, perhaps using the Hellenistic trading point of Agios Georgios, to the west of Lissos, as their beachhead and then marching overland to take Kydonia by surprise.[39] This might help explain why Metellus did not blockade the harbour at Kydonia as the movement of his fleet along the western coast may have alerted the islanders and removed the element of surprise.

There may have even been a roll for the existing shipping route at the eastern end of the island in the military campaign, in this case for the forces sent by Pompey under the command of legate Octavius to intervene on behalf of the Cretans, and who chose Hierapytna as their beachhead and main camp (Dio Cass. 36.19; de Souza 2002: 170–171).

An emerging maritime landscape

Our current perspective is that there was no immediate change along the coastline following the conquest until the latter part of the 1st century BC, a time period that seems to link in with the establishment of the province. M. W. Baldwin Bowsky's suggestion that initially the new administration focussed on activities aimed at stabilising and consolidating the central zone (Bowsky 2002: 44) may well account for the evidence of change seen in both the harbour and urban areas at Chersonissos. Here, the Greek waterfrontage was enhanced by the construction of concrete moles to create a harbour on the eastern side of the rocky promontory (Hohlfelder and Brandon 2014: 89–93; Leatham and Hood 1958–1959: 267–269 and fig. 2). This possibly was not an original idea, as the perplexing remains of rocky stone moles on the seaward side of the Roman concrete moles are suggestive on an earlier attempt at creating an enclosed harbour. However, the chronological sequencing is far from clear on this point and post-Roman changes in the harbour landscape, including burying the entire ancient northern mole sections beneath the modern harbour wall and breakwater, is going to make it difficult to unravel and resolve this.

The use of concrete in harbour construction was new to the island, as were the engineering skills seen in the application and use of timber framed caissons in the making of the moles. This clearly represented a significant amount of organisation, investment, and purpose. Sampling of the concrete as part of the ROMACONS project in 2001 and 2007 identified the source of the pumiceous ash pozzolan used in the cement mix of the Chersonissos moles as originating in the Naples region. Links between this part of Italy and Crete had been enriched by the decision to establish a *colonia* of Knossos as part of a land grant to the town of Capua (Harrison 1993: 57; Paton 2004: 451; Sanders 1982: 5), a town with a history of colonisation in its own right, and it is possible that the pozzolan was shipped to Crete either as ballast or as a part of the cargo (Hohlfelder and Brandon 2014: 92–93). Whilst it is possible to account for the appearance of pozzolan on the island, the matter of why this construction technique was used and why this location was chosen for this type of harbour still needs to be considered. The answer to both of these questions may lie in the strategy of the Emperor Augustus and his Empire-wide maritime plans, which saw other harbours built in a similar fashion and which may mean that the construction of the new harbour at Chersonissos was state funded (Hohlfelder and Brandon 2014: 92). If this was the case, then it reinforces the argument that Crete was a strategic maritime conquest for Rome.

[38] Kissamos is likely to have been a trading point in the Hellenistic period. Remains of a Hellenistic mole, noted during a survey of the Roman harbour, suggest there may have been an established harbour here at the time of the invasion (Theodoulou *et al.* 2018: 309–310).

[39] Hood reports on traces of occupation either side of the River Pelekaniotikos, and a possible Roman concrete quay or mole (Hood 1967: 49–50).

As accomplished harbour builders the strange thing about the harbour at Chersonissos is its relatively small size, but perhaps this was not so important at the time and was overshadowed by the need to create a secure anchorage midway on the northern coast, and one which could be used all year round. The availability of pumiceous ash pozzolan on the island was also to have significant implications for other Cretan harbours and whilst there is no evidence elsewhere on the island of the use of the caisson process, which adds further weight to the suggestion that Chersonissos was a state-funded project, there is evidence of concrete being used in significant amounts in waterfrontage and quayside contexts in other parts of the island.[40]

The changes seen in the waterfront at Chersonissos were not the end of the matter and, during the course of the 1st century AD, the entire character of the urban hinterland took on a different character. This appears to have been a gradual development spread throughout the 1st century AD, and in some parts, into the 2nd century. This type of development programme was not unique to Chersonissos and is seen in other coastal towns around the island. It is also possible that the development in some places was as a result of tectonic activity in the period between AD 44–66 (Stiros and Papageorgiou 2001: 385–386; Werner *et al.* 2018: 67).[41] From the excavation work carried out at Chersonissos, it is possible to ascertain that it was not only vacant land that was developed but also areas of earlier housing were redeveloped as the new town grew in size in response its increased population.[42] For a few centuries at least, concerns about living beside the sea were a thing of the past and not a matter of current concern.

It is easy to set aside this new urban building phase as something separate from maritime activity, but this was certainly not the case. The easier access to seaborne trading markets was not only restricted to goods and produce, and when it came to building it was also about having access to a far wider range of building materials and architectural components from other parts of the Empire that were designed to stand out, to impress and tell everybody about your status. Amongst the new residents on the island there would have been architects and masons who were on hand to help source and order the materials needed to achieve this. Sadly, our understanding about how all of this came together on the island is blurred by the general lack of publication for many of the sites within the harbour towns around the island, and there is not enough available information to enable accurate island-wide mapping of this upgraded landscape. It would be interesting to see if there are local or regional patterns in the laying out this landscape beyond the broad timeframe of the 1st and 2nd centuries AD.

The end result, after of what must have been years of upheaval, was the emergence of a coastline of typical Mediterranean Greco-Roman harbour towns of the time with maintained paved roads, town houses with piped water, drainage, shops, bath houses, and places of entertainment such as theatres and amphitheatres.[43] Such a dramatic process of change could not have happened in isolation and it is hardly a coincidence that this occurs at the same time as amount of Cretan export activity expanded from the relatively insignificant levels seen at the end of the 1st century BC to one of significant size by the end of the following century (Gallimore 2019: 606–612).

Logistical challenges — the age of the merchantmen

In recent years there has been more discussion on the character and nature of the changes seen in the imports and Cretan exports during the early years of the Roman Province. Much of this has focused on the ceramic evidence, both for imported domestic wares and for amphorae, both of which remain very much in the forefront of research into Roman Crete.[44] Whilst this helps us to understand, and speculate, on the role which Crete played in the Roman Empire, there is still a huge gap in our understanding of the logistics and mechanics of the supporting infrastructure and how it all worked. As an island an important role was played by the harbours and whilst these seem to have been

[40] Other harbours on the northern coast within the central zone included Herakleion, whose development may have coincided with the foundation of the *colonia*, and on the southern coast Lasaia, Lebena, and Matala. Fragmentary Roman harbour works were observed by Honor Frost at Matala, leading her to suggest that there had once been a colonnaded jetty here (1963: 113; see also the comment on the size of the harbour in Sanders 1976: 135). Sanders also comments on the small size of the harbour and the natural challenges that must have faced ships using this harbour, citing as an example the wreck of a merchantman to the north of the bay (1982: 161).

[41] The damage from this cluster of earthquakes seems to have been widespread and significant enough for places such as the sanctuary of Aesculapius at Lebena to need significant repairs (Harrison 1988: 151). Evidence of significant destruction within this timeframe has also been noted during excavations at Chersonissos (see report on the Property of Em. Antonakakis in *Αρχαιολογικόν Δελτίον* 66 (2010), *Χρονικά*: 1127–1161).

[42] Excavations on the property of D. and N. Stamataki found that part of a Hellenistic cemetery was backfilled during in the early Roman period, with the land being subsequently developed as the new Roman town was built (*Αρχαιολογικόν Δελτίον* 63 (2008), *Χρονικά*: 1142–1146).

[43] Roman theatres are known from the harbour towns of Kissamos, Kydonia, Chersonissos, Hierapytna, Inatos, Lissos, and the islet of Kouphonisi (Sanders 1982: 57–67; Sear 2006: 294–299; also Coutsinas in this volume), with possible, though unconfirmed, amphitheatres at the harbour towns of Kissamos, Chersonissos, and Hierapytna. With two theatres and an amphitheatre, the only Cretan city comparable to Hierapytna was the provincial capital of Gorytn (Baldwin Bowsky 1994: 11–13).

[44] For instance, Francis *et al.* in this volume and Gallimore 2019: 608–610 for an overview on Cretan amphorae and the current state of research, and Gallimore 2018 for a more detailed discussion on amphora manufacture.

well suited for the piecemeal pace of seaborne trade during the 2nd and 1st centuries BC, they were not particularly well suited for the increase in trade, both in terms of imports and exports, nor extreme variance in the nature and size of some of the cargoes or the frequency of visitations during the sailing season. There was also some variance in the nature of the merchant fleet and the need to make some provision for the larger sized long-haul merchantmen.[45] The underwater geomorphological landscape meant that Crete was well equipped to handle the arrival of these larger vessels, which it can be argued added to the importance of bringing the island under the control of Rome. The islets of Dia, off the northern coast, and Kouphonisi of the south-eastern coast were located at key points close to the edge of the deeper water. Neither islet was particularly well protected from bad weather, but both would have been well positioned to operate in the sailing season and to operate as stopping points for the larger merchantmen. Use of these islets may well account for the remains seen on Kouphonisi, and which suggest a community that was sufficiently prosperous to merit the construction of a theatre with the capacity of about 1000 persons, along with public baths, and a forum (Coutsinas *et al*. 2016: 338–341; Sanders 1982: 137; also Coutsinas in this volume).[46]

It is unlikely that the stops would have been for long on the journeys heading to Rome, perhaps only allowing time for the replenishment of food and fresh water and, presumably if it was in the manifest, to off load or take on board any cargo.[47] As these locations were islets, this assumes that there was a working relationship with other main island harbours nearby and suggesting a very different type of coastal organisation than had been seen in the Hellenistic period. In the case of Kouphonisi, it is possible to consider a theoretical model whereby it operated in conjunction with the harbour and the facilities that were available just along the coast at Hierapytna.[48] Here, the harbour would have been well suited to the lighters involved in the transhipment of goods, produce and people between the two locations. As with Chersonissos, the urban and waterfrontage areas at Hierapytna were the subject of considerable redevelopment during the 1st and 2nd centuries AD, including the development of the foreshore to the west of the ancient harbour for what may be warehousing, storage and industrial activity. Whilst being possibly the largest Roman harbour on the island, Hierapytna was not an all-season harbour and may have only operated during the main part of the sailing season. Its exposure to high winds or squalls, and the presence of reefs either side of the southern facing sea entrance, are likely to created difficulties for ships entering and leaving harbour at certain times in the year. The exposure to the southerly winds in this part of the coastline was something that also affected vessels anchoring in the bays either side of the harbour promontory (Spratt 1866: 21).[49] This is only a theoretical model of how the harbours could have worked in this part of the island and it will need testing through research and investigation. Our understanding of Roman occupation and use of the islet of Dia is at a very early stage, but the status of the settlement here seems different to that found at Kouphonisi. The underwater explorations off Agios Georgios bay on the southern coast of the islet by Jacques-Yves Cousteau whilst he was on location filming *Calypso's Search for Atlantis* in 1976, revealed stratigraphic evidence of past occupation and visitations lying offshore that extends back to the Bronze Age, suggesting that this was an important anchorage and harbour.[50] Dia, also referred to as Standia, is located opposite Herakleion and is known as place of safe anchorage. As observed by Spratt, it would have been relatively easy to anchor here and transport goods to and from Herakleion by lighter, as appears to have been the practice in Venetian times (Spratt 1866: 18). As there is no indication that the Roman harbour/waterfrontage at Herakleion was of any great size, then this could have been a solution

[45] Casson estimated the average capacity of the grain carrying merchantmen to be 340 tons (1973: 369); however, there is likely to have been variance in the size of these carriers and some may have been considerably smaller.

[46] The reason for the abandonment of the settlement on the islet is possibly due to several factors, the most popular of which is the earthquake of AD 365. However, it is equally probable that the decline noted by Gallimore at Hierapytna, a short distance to the west, was also shared here, with a greater impact from drop in passing shipping and especially the large grain merchantmen (2015: 49–50).

[47] Casson estimated that some 150,000 tons of grain was annually shipped from Alexandria to Rome during the 1st to 3rd centuries AD along two main shipping routes, both of which would have passed by Crete — the northerly route via Cyprus, Rhodes and then along the southern coast of Crete, or alternatively along the north African coast to Cyrene to follow the establish route north that passed along the western coast of Crete (Casson 1973: 297–299).

[48] It is possible that there was a small harbour at Makrygialos, which was associated with a sizeable coastal villa complex. (Paton and Schneider 1999: 287–288; Sweetman 2013: 206–207). Though not previously considered as such, this appears to be one example of a *villa maritima* that existed along this stretch of the coast. Another possible example of these coastal villas, though partly submerged, has been found at Stomio, 9km east of Hierapytna (Mourtzas 1988).

[49] The narrowness of the Isthmus of Ierapetra was exploited by Hierapytna in the Hellenistic period as it expanded its political and territorial influence, giving the *polis* access to both the northern and southern coasts. Whilst the extent to which this dual access to the sea might have been used in Hellenistic times is not clear, it is possible though, that the Roman remains seen at Tholos may reflect its use as an alternative early/late-season harbour for Hierapytna on the north coast (Baldwin Bowsky 2006: 567; Gallimore 2019: 607–609; Haggis 1996).

[50] Jacques Cousteau, *Calypso's Search for Atlantis*, Part 2. 1978. For a subsequent report on the anchorages and shipwrecks, see Theodoulou *et al.* 2015.

for vessels that were unable to find berthage on the main island or who arrived out of season.

Returning to the western end of the southern coast, here there was a cluster of small Roman harbours and landing places before Cape Krios where the deeper waters would have allowed the larger merchantmen either following the coastline or making landfall whilst on the route from Cyrenaica to anchor, replenish their supplies and trade. The largest harbour of this group seems to have been Phoinix (Loutro) (Sanders 1982: 165), which Spratt regarded as having a sufficiently secure enough anchorage for it to be possible to winter here (Spratt 1866: 27–28; Francis 2017: 512–513). Phoinix is amongst the places on this part of the coastline listed in the *Stadiamus Maris Magni* (Price *et al.* 2002: 195–200) as is what would have been the next large harbour if you were sailing around and along the western coast, namely that of Phalasarna (Pirazzoli *et al.* 1992: 375). This harbour looks to have been non-operational by the 1st century AD, and it may have been included in the *Stadiamus* as the bay here might still have been used as an anchorage and temporary stop for the replenishment of supplies.[51]

Logistical challenges — where are the warehouses?

The new business resulting from the passing trade of the merchantmen vessels would have been far less in comparison to that originating from the continued expansion of the inter-island trading networks, and whilst the different types of maritime activity seen on the island during the Hellenistic period (intra-island, inter-island and long-haul) were still applicable there were noticeable changes around the coastline. As the 1st century AD progressed, Crete managed to increase its productivity and became a far more reliable and credible of exporter of goods and produce. The establishment of the Province had already seen an increase in the quantity and types of imports, and it appears it was not long before the same could be said of exports. How these changes impacted on daily life in and around the Cretan harbours is something that we do not know, for whilst we can draw on various documented sources to help identify the harbours, we know little about what happened once a vessel had entered a harbour and tied up at the quayside. As was the Mediterranean style, it is possible to imagine quaysides with stacked amphora, crates and sacks of other goods and produce waiting to be loaded, but what logistics were involved in getting these goods to that quayside in the first place?

As an example of these logistical problems the movement of liquid goods, such as wine, for export or local distribution makes a good case study. Here there was clearly a need for planning and organisation and surprisingly for an industry that has attracted so attention in the context of both Hellenistic and Roman Crete over the years, we still know very little about the practicalities and logistics about its movement from the vineyards and farms to the quayside. Whilst the roads within the harbour towns were made-up,[52] once out in the Cretan countryside the road or track surfaces would have been less reliable, and not ideal for a mule driven cart full of amphorae. The growing number of amphorae production centres being found in the coastal zone (see the article by Francis *et al.* in this volume), suggests that the pressed wine was being brought closer to the sea to be packaged for its exportation (Marangou 1999: 273). Logistically this would make sense as the filled amphorae would have a shorter journey to the point of their departure. The wine presumably travelled from the vineyard/farm in wooden containers, the material for which was readily available on the island (Coutsinas, in this volume, raises an interesting point as to whether, in some places, harvested grapes might have been transported by boat to processing points).[53] The absence of storage facilities, or buildings that can be recognised as such, whilst being worrying, suggests that the wine travelled to the filling point on demand — either to supply the home market (shops or private customers), or for a specific export order, for instance.[54] Such an arrangement would have suited many of the older Cretan harbours where the urban hinterland had taken up any useful space that might have been used for warehouses. This problem is highlighted at Chersonissos, where, and if our interpretation is correct, it seems that the urban area in Roman times came right up to the waterfrontage (Leatham and Hood 1958–1959: 269 and fig. 2).

Another interesting logistical problem, this time in the case of imports, concerns that of heavy building materials. Stone and marble architecture, sculpture, and sarcophagi comprised the heaviest and largest of the imported goods. The handling of these items

[51] This activity might help explain the presence of Roman pottery within the bay area.

[52] Several Roman milestones have been recorded providing useful information on the road networks and which is supplemented by epigraphical evidence from Hierapytna which provides interesting insight into the repair and maintenance of the highways and byways within the urban area (Baldwin Bowsky 2006, 2012; Baldwin Bowsky and Niniou-Kindeli 2006).

[53] In the context of wine from Lyttos, Gallimore makes the point that the nearest known amphorae production site was at Chersonissos, and that presumably the wine travelled in either skins, barrels, or another form of contained to be filled there, close to the harbour (Gallimore 2018: 383). In some cases, it is evident that coastal amphora production centres were located adjacent to the pressing areas, as can be seen with the late-Hellenistic olive pressing and amphorae production arrangement found at Loutra, Rethymon, in western Crete (Tsatsaki and Nodarou 2014).

[54] Rural storage structures were likely to simple constructions comprising dry-stone walling foundations and timber superstructures and may not survive or be easy to identify in the modern landscape. It also possible that resident merchants had storage facilities within urban areas.

could not have done without access to a quayside that was equipped with the proper lifting equipment — cranes and hoists — and a readily available resource of manpower. Harbours such as Chersonissos and Hierapytna, for example, may have been equipped for this, but the number of harbours around the island where this activity could be undertaken is likely to have been limited. With transport by sea still being the fastest and easiest means of transport around the island, for heavy materials like this it is possible to envisage these items, which would have been pre-ordered, being transferred on to barges or other vessels and taken by sea to the nearest suitable coastal point to their end destination.[55] With space at a premium in the harbours, this is an example of another product where organisation would have been very important as these materials were too heavy to keep moving about and there may not have been the space to store them close by. Imported stonework was not the only heavy building material being shipped and consideration also needs to be given to both the stone and marble originating from the island's coastal quarries Whilst much of the quarried material may well have been destined for local use, it was still cheaper and more practical to ship by sea where possible (Tziligkaki 2018: 253), though how this was organised and whether this was also based on pre-ordered materials is far from clear.

Space around or close to the point of entry, whether it was a harbour or a simple quayside, was also important for the domestic ceramics which arrived on Crete as return cargoes. Influenced by the economic factors of maximation of loads, the preference would have to been carry open, stackable forms, with a low risk of breakage. Comprising both cook wares and table wares, these are likely to have been offloaded as bulk, or sizeable, loads and were unlikely, at the point of arrival on the island, to have specific end users. In terms of logistics, these cargoes would have needed to be barrowed to storage nearby for onwards distribution to selling outlets around the island and, like marble and stone, it may well have been that only a limited number of places around the island were equipped to handle these goods.

Other maritime industries

The maritime landscape also included other industries which it has not been possible to cover here, largely because we know so little about them. Included amongst these is the fishing industry, the enigma of which has previously been well presented by J. Francis (2010). That such an industry existed is not without question, and for the most part there is an expectation that the day-to-day activities of the Cretan fishermen of past times would be practically invisible to us today. What seems to have survived, and what perplexes us, is the evidence of fish processing in the form of the rock-cut fish tanks at various locations around the island. Key questions as to what might have been the end products from these tanks remains unanswered. Francis has suggested that they might have been used for both the breeding of *murex* snails (2010: 270) or fish (2010: 272–273) and with no evidence in the form of the vats normally associated with the production of either salted fish or *garum* our current perspective on their role in the maritime landscape remains unclear.

The possibility that some of the so-called fish tanks could be part of local quarrying operations is also worth noting (Francis 2010: 270–272), though their proximity to quarries could reflect nothing more than the need of the stonemason's skills and expertise and quarry labour in cutting out the tank. There are clearly more questions than answers and more targeted research and investigation is needed to help us make sense of the fragmentary evidence that currently exists.

Conclusions

The article has been a journey of change and transition, beginning with a coastline where it is possible to imagine occasional visitors in the sailing season stopping along the coastline to sell or exchange their cargo of products such wine from Rhodes, and finally arriving at a point where the visitations had increased to a level that berthing space was in high demand and the quaysides were bustling with activity, with cargoes stacked along them ready to be loaded and people standing and waiting for goods to be unloaded. At social level, this journey has been from a time when the islanders of Crete had little interest in the sea beyond that of fishing and the occasional voyage to sacred sites overseas to one where the sea had become a key part of their way of life and a means of their future wealth and prosperity. Visualising a description like this is the easy part however finding and identifying the evidence to support it still remains a huge challenge for any researcher, albeit quite an exciting one at that.

As with other parts of the world, the Cretan coastline is an ever-changing environment that is constantly at risk and under threat. The importance of tourism to the Cretan economy, eustatic change bringing rising sea-levels, climate change and the location of the island in area with a history of tectonic activity and tsunami's, are all very real threats and the heighten the need and urgency to ensure that the coastlines are properly recorded and the heritage along them monitored. The complex nature of the coastal landscape also requires multi-disciplined approach and the demolition of the traditional boundaries between terrestrial and

[55] A shipwreck with a cargo of stone blocks was noted during underwater survey work near Cape Choironissi, on the eastern side of the Rhodopos peninsula in 2013 (Theodoulou 2018: 305–306).

underwater archaeology, a topic which has been subject of much debate in the context of maritime cultural landscape studies since it was first raised by Christer Westerdahl in the early 1990's (Westerdahl 1992). If there ever was a time for change and increased research activity, then that time is now for just as the evidence of past communities living by the sea was disappearing in between the visits of the early travellers it is important to recognise that this process has not stopped and that as each year passes another piece of past life along the coast is lost.

Bibliography

Primary Sources

Appian. *Roman History*, Vol. 1: Books 1–8.1. Translated by Brian McGing. Loeb Classical Library 2. Cambridge: Harvard University Press, 1912.

Dio Cassius. *Dio's Roman History*, Vol. 3: Books 36–40. Translated by E. Cary. Loeb Classical Library 53. Cambridge: Harvard University Press, 1969.

Livy. *The History of Rome.* Book 42. Translated by Rev. Cannon Roberts. New York: E.P. Dutton and Co., 1912.

Pliny. *Natural History*, Vol. II: Books 3–7. Translated by H. Rackham. Loeb Classical Library 352. Cambridge: Harvard University, 1942.

Philostratus. *The Life of Apollonius of Tyana. The Epistles of Apollonius and the Treatise of Eusebius,* Book I. Translated by F.C. Conybeare. London: William Heinemann and The Macmillan Co., 1912.

Strabo. *Geography,* Vol. IV: Books 8–9. Translated by H.L. Jones. Loeb Classical Library 196. Cambridge: Harvard University Press, 1968.

Secondary Sources

Arnaud, P. 2011. Ancient sailing-routes and trade patterns: the impact of human factors, in D. Robinson and A. Wilson (eds) *Maritime Archaeology and Ancient Trade in the Mediterranean* (Oxford Centre for Maritime Archaeology Monograph 6): 59–78. Oxford: Oxbow Books.

Baika, K. 2013a. Rhithymna/Arsinoe (Rethymnon), in D.J. Blackman, B. Rankov, K. Baika, H. Gerding and J. Pakkanen, *Shipsheds of the Ancient Mediterranean*: 501–508. Cambridge: Cambridge University Press.

Baika, K. 2013b. Setaea/Ets (Seteia, Trypitos), in D.J. Blackman, B. Rankov, K. Baika, H. Gerding and J. Pakkanen, *Shipsheds of the Ancient Mediterranean*: 518–524. Cambridge: Cambridge University Press.

Baika, K. 2013c. Itanos, in D.J. Blackman, B. Rankov, K. Baika, H. Gerding and J. Pakkanen, *Shipsheds of the Ancient Mediterranean*: 568–569. Cambridge: Cambridge University Press.

Bonnier, A. 2008. *EPINEIA KAI LIMENES*: the relationship between harbours and cities in ancient Greek texts. *Opuscula* 1: 47–61.

Bowsky, M.W. 2012. Four inscriptions from greater Knossos and the road to its port at Heraklion (Crete). *Annual of the British School at Athens* 107: 313–339.

Baldwin Bowsky, M.W. 2006. Highways and byways of Roman Hierapytna (Crete): four new Claudian road inscriptions. *Annuario della scuola archeologica di Atene e delle missioni italiana in Oriente* 84: 551–580.

Baldwin Bowsky, M.W. 2002. Reasons to reorganize: Antony, Augustus, and central Crete. *Electrum*, 6: 25–65.

Baldwin Bowsky, M.W. 1994. Cretan connections: the transformation of Hierapytna. *Cretan Studies* 4: 1–44.

Baldwin Bowsky, M.W. and Niniou-Kindeli, V. 2006. On the road again. A Trajanic milestone and the road connections of Aptera, Crete. *Hesperia* 75: 405–433.

Beresford, J. 2012. *The Ancient Sailing* Season (*Mnemosyne* Supplements. History and Archaeology of Classical Antiquity 351). Leiden and Boston: Brill.

Blackman, D.J. and K. Branigan. 1975. An archaeological survey of the south coast of Crete, between the Ayiofarango and Chrisostomos. *Annual of the British School at Athens* 70: 17–36.

Casson, L. 1994. *Travel in the Ancient World*. Baltimore & London: The John Hopkins University Press.

Casson, L. 1984. *Ancient Trade and Society.* Detroit: Wayne State University Press.

Casson, L. 1973. *Ships and Seamanship in the Ancient World.* Princeton: Princeton University Press.

Casson, L. 1954. The grain trade of the Hellenistic world. *Transactions and Proceedings of the American Philological Association* 85: 168–187.

Chaniotis, A. 1999. Milking the mountains. Economic activities on the Cretan uplands in the Classical and Hellenistic period, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 181–220. Stuttgart: Franz Steiner Verlag.

Chaniotis, A. 1996 *Die Vertäge zwischen kretischen Poleis in der hellenistischen Zeit* (Heidelberger althistorische Beiträge und epigraphische Studien 24). Stuttgart: Franz Steiner Verlag.

Cornelio, F. 1755. *Creta sacra sive de espiscopis utrinsque ritus graeci et latini in insula Cretae.* Venice: Typis J.B. Pasquali.

Coutsinas, N. 2020. Hellenistic Olous: connectivity and defence, in R. Cantilena and F. Carbone (eds) *Monetary and Social Aspects of Hellenistic Crete* (*Annuario della scuola archeologica di Atene e delle missioni italiana in Oriente*, Suppl. 8): 35–48. Athens: Scuola archaeologica italiana di Atene.

Coutsinas, N. 2013. *Défenses crétoises. Fortifications urbaines et défense du territoire en Crète aux époques*

classique et hellénistique (Cahiers archéologiques de Paris I, n°3). Paris: Publications de la Sorbonne.

Coutsinas, N., G. Max and A. Kelly. 2016. Kouphonisi (Greece): a briefly vibrant Roman harbourage between Crete and Africa, in F. Leandri, J. Bloemendal, L. Lespez and S. Fachard (eds) *Géoarchéologie des îles de Méditerranée*, 333–344. Paris: CNRS Éditions.

Cross, M. 2011. *The Creativity of Crete: City States and the Foundations of the Modern World*. Oxford: Signal Books.

Davaras, C. 1974. Rock-cut fish tanks in eastern Crete. *Annual of the British School at Athens* 69: 87–93.

De Souza, P. 2002. *Piracy in the Graeco-Roman World*. Cambridge: Cambridge University Press.

De Souza, P. 1998. Late Hellenistic Crete and the Roman conquest, in W.G. Cavanagh and M. Curtis (eds) *Post-Minoan Crete. Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College, London, 10–11 November 1995* (British School at Athens Studies 2): 112–116. London: British School at Athens.

Deacon, M. 1978. *Vice-Admiral TAB Spratt and the Development of Oceanography in the Mediterranean 1841–1873* (Maritime Monographs and Reports 37). Greenwich: National Maritime Museum.

Detorakis, T.E. 1994. *History of Crete.* Herakleion: Th. Detorakis.

Falkener, E. 1852. On the antiquities of Candia. No. I. 'La descrizione dell' isola di Candia' in *Museum of Classical Antiquities*, No. VII: 263–302.

Falkener, E. 1854. Theatres and other remains in Crete, from a MS history of Candia by Onorio Belli in 1586, in *Museum of Classical Antiquities* (Supplement). London: Trübner.

Francis, J. 2017. Roman influence on Greek Sphakia, in D. Rupp and J. Tomlinson (eds) *From Maple to Olive: A Colloquium to Celebrate the 40th Anniversary of the Canadian Institute in Greece* (Publications of the Canadian Institute in Greece 10): 505–533. Athens: Canadian Institute in Greece.

Francis, J. 2010. A re-evaluation of rock-cut fish installations in Roman Crete. *Creta Antica* 11: 255–277.

Frost, F.J., and E. Hadjidaki. 1990. Excavations at the harbor of Phalasarna in Crete: the 1988 season. *Hesperia* 59: 513–527.

Frost, H. 1963. *Under the Mediterranean.* London: Routledge and Kegan Paul Ltd.

Gagarin, M. and P. Perlman. 2016. *The Laws of Ancient Crete: c. 650–400 BCE.* Oxford: Oxford University Press.

Gallimore, S. 2019. An island in crisis? Reconsidering the formation of Roman Crete. *American Journal of America* 123.4: 589–617.

Gallimore, S. 2018. The relationship between agricultural production and amphora manufacture on Roman Crete. *Journal of Roman Archaeology* 31: 373–386.

Gallimore, S. 2015. *An Island Economy. Hellenistic and Roman Pottery from Hierapytna, Crete*. New York: Peter Lang.

Gerding, H. 2013. Matalon (Matala), in D.J. Blackman, B. Rankov, K. Baika, H. Gerding and J. Pakkanen, *Shipsheds of the Ancient Mediterranean*: 389–392. Cambridge: Cambridge University Press.

Guizzi, F., 1999. Private economic activities in Hellenistic Crete: the evidence of the *Isopoliteia* treaties, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29: 181–220. Stuttgart: Franz Steiner Verlag.

Hadjidaki, E. 1988. Preliminary report of excavations at the harbor of Phalasarna in west Crete. *American Journal of Archaeology* 92.4: 463–479.

Hadjidaki, E. 2001. The Roman destruction of Phalasarna, in N.J. Higham (ed.) *Archaeology of the Roman Empire. A Tribute to Life and Works of Professor Barri Jones* (British Archaeological Reports International Series 940): 155–166. Oxford: Archaeopress.

Hadjidaki, E. and H. Iniotakis. 2000. Hellenistic ceramics from Phalasarna found from 1986–1990. *The Ancient World* 31.1: 54–73.

Hadjisavvas, S. and A. Chaniotis. 2012. Wine and olive oil in Crete and Cyprus: socio-economic aspects, in G. Cadogan, M. Iacovou, K. Kopaka and J. Whitley (eds) *Parallel Lives. Ancient Island Societies in Crete and Cyprus* (British School at Athens Studies 20): 157–173. London: British School at Athens.

Haggis, D.C. 1996. The port of Tholos in eastern Crete and the role of a Roman horreum along the Egyptian corn route. *Oxford Journal of Archaeology* 15.2: 183–209.

Harrison, G.W.M. 2011. Pliny and Cretan coastal installations, in M. Andrianakis (ed.) *Πεπραγμένα του Ι΄ Διεθνούς Κρητολογικού Συνεδρίου (Χανιά, 1-8 Οκτωβρίου 2006)*, Vol. B2: 87–107. Chania: Philologikos Syllogos 'O Chrysostomos'.

Harrison, G.W.M. 1993. *The Romans and Crete.* Amsterdam: Adolf M. Hakkert.

Harrison, G.W.M. 1988. Background to the first century of Roman rule in Crete. *Cretan Studies* 1: 125–155.

Hasebroek, J. 1965. *Trade and Politics in Ancient Greece.* New York: Biblio and Tannen.

Hohlfelder, R.L. and C.J. Brandon. 2014. Narrative of the ROMACONS fieldwork, in C.J. Brandon, R.L. Hohlfelder, M.D. Jackson and J.P. Oleson, *Building for Eternity. The History and Technology of Roman Concrete Engineering in the Sea*: 55–101. Oxford: Oxbow Books.

Hood, M.S.F. 1967. Some ancient sites in south-west Crete. *Annual of the British School at Athens* 62: 47–56.

Hood, S. and P. Warren. 1966. Ancient sites in the province of Ayios Vasilios, Crete. *Annual of the British School at Athens* 61: 163–191.

Jones, A. 2011. Ptolemy's *Geography*: a reform that failed, in Z. Shalev and C. Burnett (eds) *Ptolemy's Geography*

in the Renaissance (Warburg Institute Colloquia 17): 15–30. London and Turin: The Warburg Institute and Nico Argno Editore.

Katzev, M.L. 1981. The reconstruction of the Kyrenia ship, 1972–1975. *National Geographical Society Research Reports* 13: 315–328.

Kotsonas, A. 2016. Greek and Roman Knossos: the pioneering investigations of Minos Kalokairinos. *Annual of the British School at Athens* 111: 299–324.

Leatham, J. and S. Hood. 1958–1959. Sub-marine exploration in Crete, 1955. *Annual of the British School at Athens* 53–54: 263–280.

Marangou, A. 1999. Wine in the Cretan economy, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 247–268. Stuttgart: Franz Steiner Verlag.

Meiggs, R. 1998. *Trees and Timber in the Ancient Mediterranean World*. Oxford: Clarendon Press.

Moore, D. 2010. *Dawn of Discovery: The Early British Travellers to Crete* (British Archaeological Reports International Series 2053). Oxford: Archaeopress.

Mourtzas, N. 2012. Fish tanks of eastern Crete (Greece) as indicators of the Roman sea level. *Journal of Archaeological Science* 39: 2392–2408.

Mourtzas, N. 1988. Archaeological constructions as indicators of the sea-level during the last 2000 years in the area of Ierapetra (S.E. Crete, Greece), in G.C. Koukis and P.G. Marinos (eds) *Engineering Geology of Ancient Works, Monuments and Historical Sites — Preservation and Protection*: 1557–1564. Rotterdam: Balkema.

Mourtzas, N. and E. Kolaiti. 2014. Geoarchaeology of the Roman harbour of Ierapetra (SE Crete, Greece) *Méditerranée* [Online], Varia: 1–14.

Papadopoulos, N.G., A. Sarris, M.C. Salvi, S. Dederix, P. Soupios and U. Dikmen. 2012. Rediscovering the small theatre and amphitheatre of ancient Ierapytna (SE Crete) by integrated geophysical methods. *Journal of Archaeological Science* 39: 1960–1973.

Pashley, R. 1837a. *Travels in Crete*, Vol. 1. London: John Murray.

Pashley, R. 1837b. *Travels in Crete*, Vol. 2. London: John Murray.

Paton, S. 2004. Knossos: an imperial renaissance, in G. Cadogan, E. Hatzaki and A. Vasilaskis (eds) *Knossos: Palace, City, State* (British School at Athens Studies 12): 451–455. London: British School at Athens.

Paton, S. and R.M. Schneider. 1999. Imperial splendour in the province: imported marble on Roman Crete, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 279–304. Stuttgart: Franz Steiner Verlag.

Perlman, P. 2004. Crete, in M.H. Hansen and T.H. Nielsen (eds) *An Inventory of Archaic and Classical Poleis*: 1144–1195. Oxford: Oxford University Press.

Pirazzoli, P.A., J. Ausseil-Badie, P. Giresse, E. Hadjidaki and M. Arnold. 1992. Historical environmental changes at Phalasarna harbor, west Crete. *Geoarchaeology* 7.4: 371–392.

Pococke, R. 1745. *A Description of the East and Some Other Countries,* Vol. 2. London: Bowyer.

Price, S., T. Higham, L. Nixon, and J. Moody. 2002. Relative sea-level changes in Crete: reassessment of radiocarbon dates from Sphakia and West Crete. *Annual of the British School at Athens*, 97: 171–200.

Rackham, O. and J. Moody. 1996. *The Making of the Cretan Landscape.* Manchester: Manchester University Press.

Roller, D.W. 2018. *A Historical and Topographical Guide to the Geography of Strabo.* Cambridge: Cambridge University Press.

Russell, A.G. 1942. The Greek as a mercenary soldier. *Greece and Rome* 11.33: 103–112.

Sanders, I.F. 1982. *Roman Crete. An Archaeological Survey and Gazetteer of Late Hellenistic, Roman and Byzantine Crete.* Warminster: Aris and Philips.

Sanders, I.F. 1976. Settlement in the Hellenistic and Roman periods on the plain of the Messara, Crete. *Annual of the British School at Athens* 71: 131–137.

Sear D. 2006. *Roman Theatres: An Architectural Study* (Oxford Monographs on Classical Archaeology). Oxford: Oxford University Press.

SEG = Supplementum Epigraphicum Graecum. Leiden: Sijthoff and Amsterdam: Gieben, 1923–.

Shaw, J.W. 1989. Phoenicians in southern Crete. *American Journal of Archaeology* 93.2: 165–183.

Shaw, J.W. 2006. *Kommos. A Minoan Harbor Town and Greek Sanctuary in Southern Greece.* Herakleion: Mystis.

Shipley, G. 2011. *Pseudo-Skylax's Periplous. The Circumnavigation of the Inhabited World*. Exeter: Bristol Phoenix Press.

Simyrdanis, K., N. Papadopoulos and G. Cantoro. 2016. Shallow offshore archaeological prospection with 3-D Electrical Resistivity Tomography: the case of Olous (modern Elounda), Greece. *Remote Sensing* 8: 897.

Spratt, T.A.B. 1866. *Sailing Directions for the Island of Candia or Crete.* London: The Hydrographic Office, Admiralty.

Spratt, T.A.B. 1865a. *Travels and Researches in Crete,* Vol. 1. London: John Van Voorst.

Spratt, T.A.B. 1865b. *Travels and Researches in Crete*, Vol. 2. London: John Van Voorst.

Stampolidis, N.C. and A. Kotsonas. 2006. Phoenicians in Crete, in S. Deger-Jalkotzy and I.S. Lemos (eds) *Ancient Greece from the Mycenaean Palaces to the Age of Homer*: 337–360. Edinburgh: Edinburgh University Press.

Stefanakis, M. 1999. The introduction of coinage in Crete and the beginning of local minting, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger

althistorische Beiträge und epigraphische Studien 29): 247–268. Stuttgart: Franz Steiner Verlag.

Stiros, S.C. and S. Papageorgiou. 2001. Seismicity of western Crete and the destruction of the town of Kisamos at AD 365: archaeological evidence. *Journal of Seismology* 5: 381–397.

Stillwell, R., W.L. MacDonald and M.H. McAllister. 1976. *The Princeton Encyclopedia of Classical Sites*. Princeton: Princeton University Press.

Sweetman, R.J. 2013. *The Mosaics of Roman Crete. Art, Archaeology and Social Change.* Cambridge: Cambridge University Press.

Syll³. = Sylloge Inscriptionum Graecorum. Edited by W. Dittenberger. Leipzig: S. Hirzelium, 1915–1924.

Themelis, P.G. (ed.) 2009. *Ancient Eleutherna. Sector 1*, Vol. 1. Athens: University of Crete.

Themelis, P. 2003. *Ancient Eleutherna: East Sector*. Athens: Archaeological Receipts Fund.

Theodoulou, T, B. Foley and A. Tourtas. 2018. Western Crete project, 2013: preliminary report. Underwater survey at Kissamos Bay and the promontories of Rhodopos and Gramvousa, in A. Simossi (ed.) *Diving into the Past. Underwater Archaeological Research, 1976–2014, Athens, 6th March 2015*: 305–312. Athens: Fund of Archaeological Proceeds.

Theodoulou, T., B. Foley, D. Evaggelistis, G. Koutsouflakis, D. Sakellariou and A. Tourtas. 2015. Crete project 2011: underwater archaeological survey at the area between Herakleion and Dia. A preliminary report, in P. Karanastasi, A. Tzigounaki and C. Tsigonaki (eds) *Αρχαιολογικό Έργο Κρήτης* 3. *Πρακτικά της 3ης Συνάντησης. Ρέθυμνο, 5–8 Δεκεμβρίου 2013*: 615–625. Rethymnon: University of Crete.

Tsatsaki, N. and E. Nodarou. 2014. A new Hellenistic amphora production centre in west Crete (Loutra, Rethymnon): study and petrographic analysis of the pottery assemblage, *Annual of the British School at Athens* 109: 287–315.

Tziligkaki, E.K. 2018. Quarrying the coasts of Crete in antiquity: some geoarchaeologica considerations. *Bulletin Geological Society of Greece* 53.1: 229–265.

Van Spitael, M.A. 1981. Cristoforo Buondelmonti. Descriptio Insule Crete et Liber Insularum, Cap. XI: Creta. Herakleion: Syllogos Politistikos Anaptyxeos.

Viviers, D. 1999. Economy and territorial dynamics, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 221–233 Stuttgart: Franz Steiner Verlag.

Werner, V., K. Baika, P. Fischer, H. Hadler, L. Obrocki, T. Willershäuser, A. Tzigounaki, A. Tsigkou, K. Reicherter, I. Papanikolaou, K. Emde and A. Vött. 2018. The sedimentary and geomorphological imprint of the AD 365 tsunami on the coasts of southwestern Crete (Greece) — examples from Sougia and Palaiochora. *Quaternary International* 473: 66–90.

Westerdahl, C. 1992. The maritime cultural landscape. *The International Journal of Nautical Archaeology* 21.1: 5–14.

9.

Becoming Roman: The Cretan Evidence of Augustan Stamps on Italian Sigillata

Martha W. Baldwin Bowsky

Introduction

This study analyses one kind of material evidence for how Crete began to become Roman, specifically how the island came to be involved in the wider economic system of the Roman Empire, as heralded by the presence of imported pottery (Alcock 1997: 2, 4). The mid- to late-Augustan stamps on Italian Sigillata found on Crete date to the midpoint of the transformation of Crete from Hellenistic to Roman, between the mid-1st century BC to the mid-1st century AD (Gallimore 2019: 590). Participation in trade networks that stretched across the island and the Mediterranean is likely to have been an important component in the development of the island's economy, particularly its primary large-scale export industry, the Cretan wine trade. Mid- to late-Augustan stamps on Italian Sigillata, moreover, survive at cities along the north coast of Crete, from Knossos westward to Aptera. Taken together, the distribution of these stamps and the location of the latest Hellenistic and earliest Roman amphora production facilities on Crete evince a pattern of exchange along the north coast of Crete, in addition to that already identified along the south coast.[1]

In an earlier study of the Italian Sigillata stamps at Aptera, I wrote that in the mid- to late-Augustan period (*c.* 20 BC–AD 15) Knossos imported the highest number of stamped sherds of Italian Sigillata, nearly four times as many as imported to Eleutherna, followed by Lappa at a distant third, and that mid- to late-Augustan stamps are not known from Gortyn or Aptera (Baldwin Bowsky 2014: 519). Stamps discovered in the full excavation of the theater of Aptera and rescue excavations at Argyroupoli (ancient Lappa) in western Crete now require a reconsideration of this assessment (Baldwin Bowsky 2019, 2020). Continued discovery, study, and publication of stamps from other cities and sites on the island — such as the capital at Gortyn, the free city of Kydonia, and the ports of Kastelli Kissamou, Chersonissos, and Hierapytna — could well increase the material evidence for importation of Italian Sigillata in the mid- to late-Augustan period.[2]

In the meantime, we can work within the constraints of the evidence currently available to document an early stage in Crete's integration into the Roman economy, by focusing on stamps on Italian Sigillata that are datable to the mid- to late-Augustan period. Appendix 9.1 presents an alphabetical register of the mid- to late-Augustan potters named on Italian Sigillata found on Crete; references to entries in this appendix in the text below will take the form of Arabic numbers in bold. Across the empire, the mid- to late-Augustan period does not include any potters who used stamps *in planta pedis,* while the Tiberian–Claudian period (*c.* AD 15–50) includes those who mostly used them (*OCK:* 36–37). Rectangular stamps are more characteristic of the mid- to late-Augustan period than of other periods but are not exclusive to it (*OCK*: 9; **1–9**, **11–12**, **14**, **17–28**). Radial stamps can be dated before 10 BC and appear to have been out of fashion by the end of the century (*OCK*: 9; **10**, **29**). A stamp *in tabella ansata* names N. Naevius Hilarus (**15**); external stamps on decorated wares name Naevius (1), (M.) (Perennius) Tigranus (2),[3] and Zoilus (1) (**13**, **16**, **30**).

In setting Crete into the context of the Greek East, we will discuss the number of potters rather than the number of stamps attested during the pre- to early Augustan and mid- to late-Augustan periods in the production and distribution of Italian Sigillata, so as to minimise any distortion caused by unusual levels of activity — high or low — at production centers and in workshops (**Table 9.1**). During the pre- to early Augustan period (*c.* 40–20 BC), Crete is one of several provinces in the Greek

[1] Casson speculated that, in the 2nd to 1st century BC, it would have been easier to bypass the free port of Delos — given the prevailing northerly winds in the Aegean — and to sail south of Crete to the straits of Messina and on to Puteoli (1984: 80; built upon in Gallimore 2015: 273–274; 2017: 141; 2019: 606; see Arnaud 2005: 172 and 178, no. 50, for a route from the straits of Messina to Kriou Metopon at the southwest extremity of Crete, as shown in Figure 9.4 below).

[2] In the course of this study, in fact, a mid-Augustan stamp has been identified at Hierapytna (Gallimore, pers. comm.; Sofianou and Gallimore 2019: 14).

[3] In the late-Augustan period, Perennii supplied most of the decorated Italian sigillata to Corinth, north of Crete (Slane 2004: 32).

Province		Period A (*c.* 40–20 BC)		Period B (*c.* 20 BC–AD 15)	
Name	*Total number of potters in all periods*	*number*	*percentage*	*number*	*percentage*
Macedonia	11			3	27.3%
Achaia	311	12	3.9%	130	41.8%
Crete	127			30	23.6%
Cyrene	75	2	2.7%	20	26.7%
Egypt	174	4	2.3%	97	55.7%
Asia	74	2	2.7%	29	39.2%
Caria	1			1	100%
Lycia	1				
Cyprus	22			4	18.2%
Cilicia	16			1	6.3%
Syria/Phoenike	39	2	5.1%	19	48.7%
Judaea	20	1	5%	8	40%
Arabia	1			8	50%

Table 9.1. Number of potters attested in provinces of the Greek East in the pre- to early and mid- to late-Augustan periods (*c.* 40 BC–AD 15).

East where no potters are thus far documented, as is also the case for Macedonia, Caria, Lycia, Cyprus, Cilicia, and Arabia.[4] In the mid- to late-Augustan period, Crete is one of the many provinces where potters began to be named; nearly a quarter of all the potters attested on the island can be dated to this period. Crete is roughly comparable to Cyrene or Macedonia but not Egypt or Achaia, in terms of percentages. Egyptian Alexandria and Achaian Corinth dominate the evidence for Italian Sigillata in this period; Crete as a whole seems to fall into a second tier of regions, one important as a transshipment point, if not on the same scale as Corinth or Alexandria (Gallimore, pers. comm.).

The mid- to late-Augustan stamps attested on Crete can be analyzed by asking a number of fundamental questions. First, which potters are attested on Crete, and how do they illustrate the high level of activity, diversity of sources, and slave signatures characteristic of this period?[5] Second, where on Crete is Italian Sigillata attested in this period, and what geographical pattern is revealed by this distribution? Third, what production centers supplied Crete in the mid- to late-Augustan period, and how do they reflect the history of the Italian Sigillata industry? Fourth, what distribution patterns might have brought Italian Sigillata to Crete in this period, and how do they reveal the island's position at a cross-roads of routes of transit and exchange? Fifth, what can these stamps tell us about the consumption of Italian Sigillata in mid- to late-Augustan Crete? Finally, how do the mid- to late-Augustan stamps on Italian Sigillata document an early stage in Cretan integration into the Roman economy?

Which potters are attested on Crete in the mid- to late-Augustan period?

Stamps of the mid- to late-Augustan period, on Crete as across the empire, reflect a high level of activity in and a great diversity of Italian Sigillata workshops, the former clear from the number of stamps attested, the latter from the variety of names recorded therein; the practice of owners or workshop managers permitting slave signatures is also well-documented (*OCK*: 36–37). Amid the variety of potters attested on Crete, we can take note of three mid- to late-Augustan members of the Ateius group;[6] three members of the Naevius group (**13–15**); and three men named Umbricius.[7] Otherwise, the many different names attested on Crete — 30 different potters or workshops named in 32 stamps[8] — illustrate both the high level of activity and the diversity of sources characteristic of this period. A notable number of slave signatures is also attested on Crete in this period (**11**, **17**, **19**, **23**, **25**, **27**, **29**).

Where is Italian Sigillata attested on Crete in the mid- to late-Augustan period?

It is no surprise that a large number and percentage of the potters attested on Crete in this period are to be found at the Augustan colony of Knossos (**1–2**, **4–5**, **7–8**, **10**, **15–17**, **20**, **21–25**, **29–30**; **Figure 9.1a–b**). What is

[4] *OCK*: CD-ROM: Sources of supply to a selected province. Pre- to early Augustan stamps are attested in Achaia, Cyrene, Egypt, Asia, Syria/Phoenike, and Judaea.

[5] In this period, slaves or dependents might be allowed by their owners or workshop managers to sign the vessels they produced as actual craftsmen (*OCK*: 15–17).

[6] **3–4; 30** has been identified with Cn. Ateius Zoilus, active AD 5–30/40.

[7] **28–29**, with two Umbricii as partners in **28.**

[8] Two stamps each name **15** and **20**.

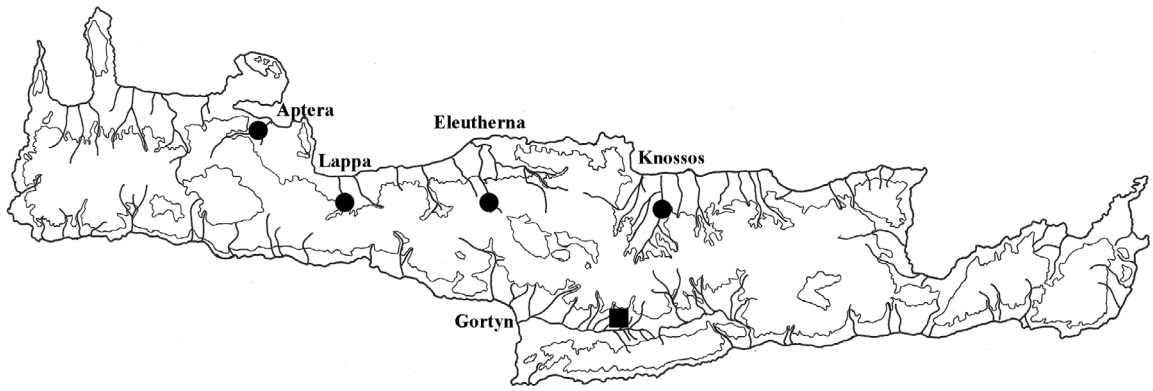


Figure 9.1a. Map of Crete showing sites mentioned in the text.

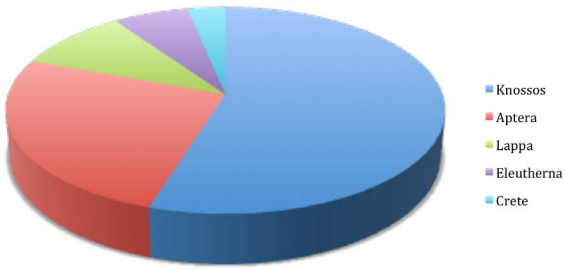


Figure 9.1b. Distribution of mid- to late-Augustan potters' stamps on Crete.

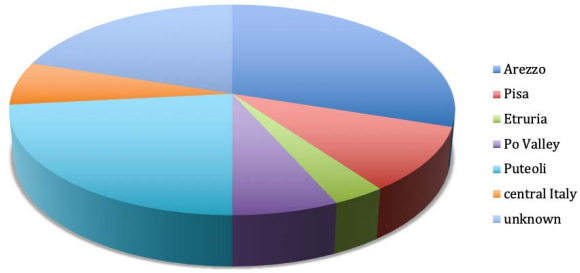


Figure 9.2. Provenience of mid- to late-Augustan potters attested on Crete.

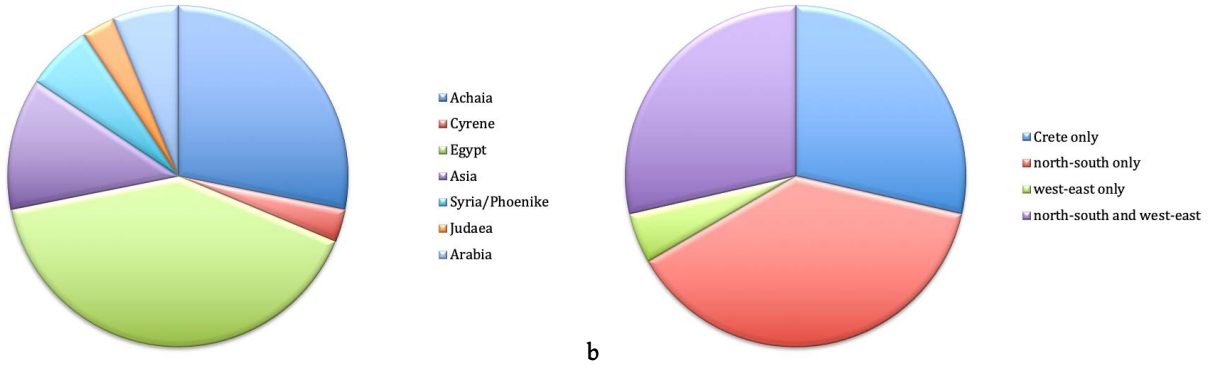
remarkable is the absence thus far of Augustan stamps at the provincial capital at Gortyn — located on the south coast of the island, where there is epigraphic evidence for the *cives Romani qui Gortynae negotiantur* in the 1st century BC and additional evidence of openness to Roman ways and artistic traditions has been identified (*IC* IV.290; Gallimore 2019: 598 and 600) — as well as the distribution of mid- to late-Augustan stamps along the north coast of Crete, not only at Knossos, but also at the free city of Lappa, where Augustus sent settlers (**9**, **18**, **20**); the polity of Eleutherna west of Mt. Ida (**3**, **11**); and Aptera in western Crete (**6**, **12–14**, **19**, **26–286**, **12–14**, **19**, **26–28**).[9] One Augustan potter cannot be attributed to any particular city or site on Crete, as the provenience of his stamp — before it came to the Heraklion Museum — is not known (**15**).[10]

[9] At Knossos and Lappa, the importation of Italian sigillata could be traditionally explained by the presence of colonists and settlers; at Eleutherna and Aptera, it might be set into the context of other evidence for openness to Roman ways, such as Roman names at Eleutherna (*IC* II.xii.30; Tzifopoulos 2009: 130–131, no. 22; see *SEG* LIX.1035) and evidence for honouring the imperial family at Eleutherna (*IC* II.xii.27–28; Tzifopoulos 2009: 117–120, no. 11, 124–126, no. 14, 126–127, no. 17; Karanastasi 2015: esp. 421–422; *SEG* LIX.1028) and Aptera (Martinez Fernandez 2007).

[10] This stamp is noted by Comfort in his study of Terra Sigillata from Italian Minturnae; Comfort writes 'The present is as good an excuse as any for illustrating a bowl by Naevius in the Candia Museum (fig. 3). The photograph was sent several years ago by Dr. Marinatos, with permission to publish' (1943: 322, n. 59).

What production centers supplied Crete in the mid- to late-Augustan period?

The provenience of mid- to late-Augustan potters attested on Crete neatly reflects the history of the Italian Sigillata industry in the late-1st century BC and the early 1st century AD (**Figure 9.2**). It is therefore no surprise that the greatest number and percentage of potters attested on Crete in this period were active at Arezzo (**2–3**, **7–8**, **16–17**, **19**, **22**, **25**), where the Italian Sigillata industry began (*OCK:* 37). A significantly smaller group of potters were active at Pisa (**1**, **4**, **30**), a production center now identified as one to which potters from Arezzo migrated in order to take advantage of its access to the sea and maritime resources (*OCK*: 37 and 46; Forster 2001: 141). One potter active in Etruria but not at Arezzo or Pisa is attested at both Knossos and Lappa (**20**). Two potters were active in the Po Valley (**5**, **18**), another area identified as one to which Arretine potters expanded in the mid- to late-Augustan period with an eye to northern and eastern markets (*OCK*: 37–38; Zahbelicky-Scheffenegger 2004: 220–221). After Arezzo, the best-attested production center for mid- to late-Augustan Crete is Puteoli (**10–11**, **13–15**, **21**, **24**), where a Campanian center was active in the first half of the 1st century (*OCK*: 32–33). Two potters were active in central Italy (**12**, **26**), before it became a dominant



a b

Figure 9.3a–b. Distribution in the Greek east of mid- to late-Augustan stamps attested on Crete: a) by Roman province; b) by pattern of exchange.

production area in the period after AD 50 (*OCK*: 50). Six potters remain of unknown provenience (**6**, **9**, **23**, **27–29**).

What distribution patterns might have brought Italian Sigillata to Crete in the mid- to late-Augustan period?

Analysis of the distribution in the Greek East of mid- to late-Augustan stamps attested on Crete reveals Crete's strategic position between north-south (or south-north) and west-east (or east-west) patterns of transit and exchange (**Figure 9.3a–b**). The concrete evidence provided by Italian Sigillata stamps is significant for our understanding of Crete's trade relations in the Augustan period, as an island in a location suited to transshipment, even as it produced archaeologically visible goods, i.e., Late-Hellenistic to early Roman amphorae (Gallimore 2019: 608). A distinct pattern locates Crete between Achaia (**2**, **9**, **13–14**, **16**, **20–21**, **26**, **28**) to the north, and Egypt (**2**, **7**, **9–11**, **14**, **16**, **19–22**, **24**, **26**) and Cyrene (**15**) to the south. This pattern is highlighted by the nine potters who are attested only along it (**7**, **9–11**, **13**, **16**, **21**, **24**, **26**).[11] This analysis also places Crete at a cross-roads between north-south routes and those that run west-east to Asia (**15**, **19–20**, **22**), Syria/Phoenike (**2**, **22**), Judaea (**2**), and Arabia (**14**, **20**). Only one pair of potter-partners is attested exclusively to the east of Crete (**28**), in Asia Minor.

The special case of Apelles, slave of L. Titius (**27**), exemplifies this bivalent distribution. Apelles is a previously unknown slave of L. Titius.[12] We can take note, nevertheless, of the fact that L. Titius himself and certain of his slaves are attested in Achaia, Cyrene, and Egypt to the north and south of Crete, and in Asia, Cyprus, Syria/Phoenike, and Judaea to the east.[13]

Six potters in *OCK* are thus far attested in the Greek East only on Crete, all at Knossos (**1**, **5**, **8**, **17**, **23**, **29**). We should examine the distribution of their stamps elsewhere in order to suggest how they might have come to be attested at Knossos. Two of these six potters are most frequently known from Italy: Bassus (1) of the Po Valley (**5**), particularly in Venetia where 12/16 stamps (75%) are recorded (OCK CD-ROM: distribution of stamps for potter no. 435); C. Gavius Summacus of Arezzo (?) (**8**), particularly in Latium where 7/10 stamps (70%) are preserved (*OCK* CD-ROM: distribution of stamps for potter no. 875). The distribution of four more potters' stamps may suggest the movement of men rather than goods — to the provinces of Gaul, Germany, and Spain where legions were on the move in the Augustan period (Cooley 2009: 91). Canopus, slave of Statilia (**23**), is attested slightly more in Italy than in Gaul and Spain: 11/22 stamps (50%) are attributed to Italy; 7/22 stamps (31.8%) to Gaul and Spain (OCK CD-ROM: distribution of stamps for potter no. 1991). Amarantus of Pisa (?) (**1**) is named as frequently in Germany and Spain (8/17 stamps, 47%) as in Italy (8/17 stamps, 47%; *OCK* CD-ROM: distribution of stamps for potter no. 83). Two more potters are documented more frequently in Gaul, Germany and Spain than in Italy: Rufio, slave of T. Rufrenus of Arezzo (?) (**17**), named on 35/45 stamps (77.8%; *OCK* CD-ROM: distribution of stamps for potter no. 1732); and Felix, slave of L. Umbricius of unknown provenience (**29**), named on 4/6 stamps (66.7%; *OCK* CD-ROM: distribution of stamps for potter no. 2457).

[11] Two potters are attested only in Achaia (**13**, **16**); five only in Egypt or Cyrene (**7**, **9–11**, **24**); and two in both Achaia and Egypt or Cyrene (**21**, **26**).

[12] An apparently separate potter, Apelles slave of Titius (without the praenomen Lucius), is unattested in the Greek East; his name appears on one stamp each in Etruria, Latium, Venetia, and Sardinia (*OCK* type 2251).

[13] L. Titius, *OCK* type 2203, attested in Achaia, Cyrene, Egypt, Asia, Cyprus, and Syria/Phoenike. Slaves of L. Titius documented only to the north and south of Crete: C(), *OCK* type 2207; Hilario, *OCK* type 2221; Murtilus, *OCK* type 2227; Philadelphus, *OCK* type 2229; and Romanus, *OCK* type 2234. Slaves of L. Titius named only to the east of Crete: Anteros, *OCK* type 2204; Pudens, *OCK* type 2232; and Quadratus, *OCK* type 2233. Slaves of L. Titius recorded both to the north or south and to the east: Blandus, *OCK* type 2206; Chrestio, *OCK* type 2209; Domesticus, *OCK* type 2216; Philasitus, *OCK* type 2230; and Suavis, *OCK* type 2236.

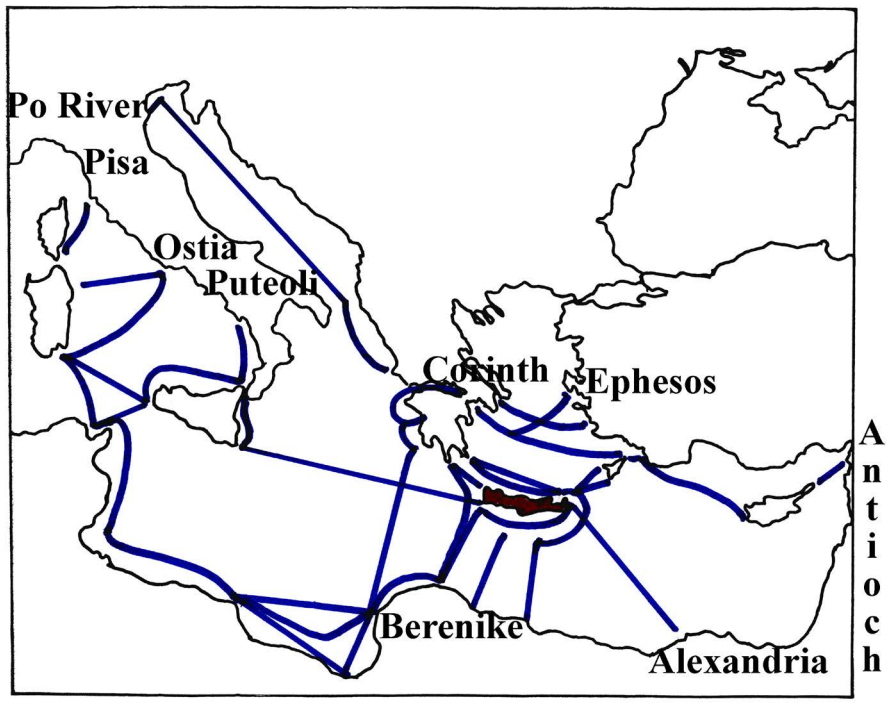


Figure 9.4. Selected routes of transit and exchange (after Arnaud 2005: 155, 172, 180–181, 197, 212, 225).

Seven potters in *OCK* are hitherto unattested in the Greek East, not even at Knossos (**3–4**, **6**, **12**, **18**, **25**, **30**); they too are most frequently attested in Italy or in the provinces of Gaul, Germany, and Spain. Ateius (2) (**3**) is attested dominantly in Etruria, where 372/419 (88.8%) of his stamps have been found (OCK CD-ROM: distribution of stamps for potter no. 267). Five potters are named mostly in Gaul, Germany, and Spain, again suggesting the movement of men rather than goods. Cn. Ateius Hilarus (**4**) is attested mostly in Gaul, Germany and Spain (26/32 stamps, 81.3%; *OCK* CD-ROM: distribution of stamps for potter no. 296); Mur() (**12**) is also best known from Gaul and Spain (11/14 stamps, 78.6%; *OCK* CD-ROM: distribution of stamps for potter no. 296); Zoilus (1) (**30**) is attested mostly in Gaul and Spain (5/7 stamps, 71.4%; *OCK* CD-ROM: distribution of stamps for potter no. 2543); Eutichus, slave of L. Tettius (**25**) is named somewhat more in Gaul and Germany than in Italy (6/9 stamps, 66.7%; *OCK* CD-ROM: distribution of stamps for potter no. 2543); one of the two stamps (50%) known for Cae() (**6**) is attested in Gaul; the other was found in Mauretania Tingitana (*OCK* CD-ROM: distribution of stamps for potter no. 474). C. Sa[trius?] (**18**) is named in only one other stamp, from Ligurian Tortona (*OCK* CD-ROM: distribution of stamps for potter no. 1797).

To judge from the evidence of imported finewares in this period, whose distribution is an important indicator for trade moving goods, Eastern Sigillatas A and B moved from the eastern Mediterranean to the west and Italian Sigillata from the west to the east (Malfitana *et al.* 2005: 203). Crete was strategically located amid exchange networks that connected the eastern and western Mediterranean during the 1st century BC. In the Augustan period, all three fine wares were available to consumers in a bicoastal pattern of exchange, as detailed below: on the north coast from Knossos westward to Lappa and Aptera, and on the south coast from Gortyn eastward to Lasaia, Aphrati and Hierapytna. Eastern Sigillata A, produced from the mid-2nd century BC to the mid-2nd century AD — with a Mediterranean-wide peak in the second half of the 1st century BC, including the Augustan period — may well have been produced and also distributed from the area of Antioch and Seleukeia Pieria (Lund 2005: 238–239; Malfitana *et al.* 2005: 199–200). On Crete, Eastern Sigillata A has been found and published at Knossos, Gortyn, and Phoenix (Francis 2017: 514; Lund 2005: 241–242 and figures 10.4–5); Gallimore argues that the significant presence of ESA in the 1st century BC at these sites, particularly along the south coast, provides a proxy for documenting Crete's participation in transshipment trade moving goods from east to west during that century.[14] Alongside Eastern Sigillata A, Eastern Sigillata B — produced from the Augustan period to the mid-2nd century AD — was primarily distributed from Ephesos (Lund 2003: 125, 128). On Crete it has

[14] Casson 1984: 80; see note 1, above; Gallimore 2017: 141; 2019: 606; *pace* Poblome, who had argued that Gortyn may have imported more Italian Sigillata than Eastern Sigillata due to the fact that it lay along the route of the Roman *annona,* while Knossos participated in the Aegean pattern of importing Eastern Sigillata more than Italian Sigillata (Poblome 2004: 23).

been discovered and published from Knossos, from the Augustan period onward (Lund 2003: 129); stamps on the earlier class, ESB1, have also been published from Lappa and Aptera.[15] Malfitana takes note of Eastern Terra Sigillata in general at Knossos, Gortyn, Lasaia, and Aphrati (Malfitana 2002: 126 and 140); to these Francis adds Eastern Sigillata from the Moni Odigitria Survey and Phoenix (Francis 2010: 29–30, RP1-RP4; 2017: 514).

The evidence for Italian Sigillata presented here provides important documentation for the northern side of this pattern of exchange, with goods moving from west to east and along the north coast of Crete just as regularly as east to west and along the south coast (Gallimore, pers. comm.). Italian Sigillata from workshops with a distribution in the Greek East appear to have been collected at regional and intermediary Italian ports like Pisa, Ostia, Puteoli, and Ravenna (Kenrick 2000: 47 and 50), and then passed on to similar ones in the east, such as Corinth, Alexandria, Antioch, and probably Ephesos (Slane 1989: 224; 2004: 32–36). Within the north-south pattern identified above (**Figure 9.4**), stamps comparable to those attested on Crete are particularly well-known at Corinth (20 stamps) and Alexandria, together with Cairo and Old Cairo (22 stamps), as well as at Athens (8 stamps) and Berenike (2 stamps). Within the west-east pattern already identified, comparable stamps are attested at and around Ephesos (2 stamps), and at Antioch (2 stamps), which served as a gateway to the Levant, including Judaean Beth Shan — ancient Scythopolis — (1 stamp) and Samaria (1 stamp) as well as Arabian Oboda (3 stamps); also Samos (2 stamps), Kos (1 stamp), Notion (1 stamp), Smyrna and region (2 stamps).

What can these stamps tell us about the consumption of Italian Sigillata in mid- to late-Augustan Crete?

Sherds of Italian Sigillata often speak only to 'presence' in consumption contexts (Van Oyen 2016: 123) but it is intriguing to show that most of the mid- to late-Augustan stamped sherds considered here come from domestic contexts. One stamped sherd, from Aptera's theater, was found in a closed context in the street immediately east of the *koilon* wall, where theater-goers made their way to their seats (**12;** Baldwin Bowsky 2019: 18); another from Lappa comes from a rubbish area associated with a kiln (**20**). At Knossos, stamped sherds found in a well connected with the building of the modern Sanatorium, in a well and fill layer of the Villa Dionysus, and in preparation for the modern Stratigraphical Museum come from archaeological contexts that can tell us little about consumption (**8**, **16**, **20–22**, **30**; Baldwin Bowsky 2011: 118). The Unexplored Mansion excavations, however, revealed a series of Roman houses, of which the Southwest House, Southeast House, and East House included Augustan phases (Baldwin Bowsky 2011: 118; 2016: 28–29; Sackett 1992: 20–37; cf. **1–2**, **4–5**, **7**, **10**, **15**, **17**, **23–24**, **29**). Both of the mid- to late-Augustan stamped sherds found at Eleutherna came from Roman House 1 or 2 (**3**, **11**; Baldwin Bowsky 2009: 157–158). Two of the three found at Lappa come from the storage areas of a Hellenistic–Roman house (**9**, **18;** Baldwin Bowsky and Gavrilaki 2010: 202). All but one of the mid- to late-Augustan stamps from the theater of Aptera come from archaeological contexts that could be associated with the residential area to the west of the theater, if not with the theater itself (**6**, **13–14**, **19**, **26–28**; Baldwin Bowsky 2019: 3).

How do the mid- to late-Augustan stamps on Italian Sigillata document an early stage in Cretan integration into the Roman economy?

Cretan integration into the Roman economy is perceptible from the mid-Augustan period onward, nearly 50 years after the Metellan conquest of the island. Such an interval is indicative of the resilience of Crete and is not as unexpected as Eiring had thought for Knossos.[16] Historical events, even those as significant as the conquest of a region like Crete, do not necessarily correlate with a transformation of archaeological assemblages (Gallimore 2019: 595). The process might take decades to become apparent, as the population adjusted to integration into the Roman empire; in developing economic relationships in particular, a half-century would allow cities to build up the capital needed to import Eastern and Italian fine wares and to build or rebuild the harbour infrastructure required to participate in exchange networks (Gallimore 2018: 373; 2019: 612).

Within these exchange networks, the cities that have yielded Italian Sigillata stamps from the mid- to late-Augustan period are concentrated on the north coast of the island; comparable stamps evince a corresponding connection between Crete and Achaia, with its port and capital at Corinth. Despite the fact that no Augustan stamps have been found to date at Gortyn, the comparable stamps from cities on the north coast reveal a southern connection as well, between Crete, Cyrene, and Egypt, with its port and capital at Alexandria where a grain route from Puteoli and then Ostia terminated (Gallimore 2015: 289–290; 2017: 142). Such analysis documents a west-east connection with Ephesos and Antioch, to correspond to the east-west

[15] Baldwin Bowsky 2014: 554, no. 40; Baldwin Bowsky 2019: 190–198, nos 222–230; Baldwin Bowsky and Gavrilaki 2010: 226, no. 33.

[16] Eiring 2004: 71, referring to the interval between colonisation and the presence of late-Augustan Italian Sigillata in the archaeological record.

connections that transported Eastern Sigillatas A and B westward in the Augustan period (Lund 2003: 127).

The mid- to late-Augustan stamps on Italian Sigillata provide material evidence for a phenomenon contemporary with the Late-Hellenistic to Early Roman stage in the development of Crete's large-scale export of wine, shipped in identifiable Cretan amphorae (Gallimore 2017: 140–141; 2019: 604). In the 1st century BC, amphorae were manufactured along both the north and coasts of the island: on the north coast at Mochlos in the late-2nd to early 1st century BC, and at Loutra in the late-2nd to the third quarter of the 1st century BC; on the south coast at Gortyn in the mid-2nd to late-2nd or early 1st century BC, at Myrtos Pyrgos in the late-2nd to early 1st century BC, and at Keratokambos in the 1st century BC (Gallimore 2019: 604; see also Francis *et al.* in this volume). In the imperial period, the earliest Cretan amphora production centers thus far identified are notably located along the north coast of the island, in the mid-1st to mid-2nd century AD at Heraklion, which came to serve as a port for Knossos, and in the 1st to 2nd centuries AD at Kastelli Kissamou and Nopighia, west of Aptera and Kydonia.[17] Before 25 AD, Cretan amphorae are known to have traveled to Berenike in Cyrenaica, Leptis Magna in Tripolitania, Capo Graziano off the north coast of Sicily, and both Pompeii and Ostia in the Italian peninsula; they were also found in the remains of a shipwreck off the south coast of Gallia Narbonensis (Gallimore 2017: 141; 2019: 602). In the Augustan to early Tiberian period, Cretan amphorae appear to have travelled the same routes — in an outbound direction — that Italian Sigillata travelled to reach Cyrene as well as Latium and Campania.

As Crete began to transform after the Metellan conquest in 69–67 BC, one of the early signals of integration into the Roman economy is the importation of fine tablewares. It is not only the colonists at Knossos or the settlers at Lappa who imported Italian Sigillata, but also consumers at Eleutherna and Aptera — whether Greek or Roman in identity or citizenship — who took advantage of the availability of these distinctive red-gloss wares and Crete's position at a cross-roads of Mediterranean routes of transit and exchange, to eat and drink from the fashionable wares we find in the material record today.

[17] Baldwin Bowsky 2014: 519; Marangou-Lerat 1995: 36–44. Hellenistic viticulture and amphora production sites are known on Crete as far back as the mid-4th century BC, on the north coast at Kydonia, modern Ag. Pelagia, Knossos, Lato pros Kamara, and Tripytos (*IC* II.i.10; Gallimore 2015: 269–270; Marangou-Lerat 1995: 61–63; Gallimore 2019: 603–604; see Baldwin Bowsky 2020: 414, 418, no. 4, for an amphora stamp that may be from 3rd century BC Kydonia; on the south coast from Phaistos and the Mesara plain, and from Hierapytna (Marangou-Lerat 1995: 123–124; Gallimore 2015: 270–271; 2018: 378; 2019: 604).

Appendix 9.1. Mid- to Late-Augustan Potters Attested on Crete

Entries in this appendix give the name of the potter and the shape of the stamp; *OCK* type, provenience, chronology; Cretan attestations with references in parentheses; number of stamps included in *OCK* and percentage attested in the Greek East with cities and the number of stamps for each.

1. Amarantus, rectangular; *OCK* type 83, Pisa? AD 1+; at Knossos (Sackett 1992: 144, no. Y17); 1/17 (5.9%) in Crete (Knossos 1).
2. Sex. Annius, rectangular; *OCK* type 183, Arezzo, 20 BC–AD 10; at Knossos (Sackett 1992: 144, no. Y19); 14/219 (6.4%) in Crete (Knossos 1), Achaia (Athens 4, Corinth 5), Egypt (Alexandria 1), Syria/Phoenike (Antioch 1), Judaea (Beth Shan 1, Samaria 1).
3. Ateius (2), rectangular; *OCK* type 267, Arezzo, 15–5 BC; at Eleutherna (Baldwin Bowsky 2009: 177, no. 3); hitherto unattested in the Greek East.
4. Cn. Ateius Hilarus, rectangular; *OCK* type 296, Pisa, 5 BC–AD 10; at Knossos (Forster 2009, I: 87, no. 24); hitherto unattested in the Greek East.
5. Bassus (1), rectangular; *OCK* type 435, Po Valley, 10 BC–AD 10; at Knossos (Sackett 1992: 144, no. Y23); 1/17 (6.3%) in Crete (Knossos 1).
6. Cae(), rectangular; *OCK* type 474, unknown provenience, 15 BC–AD 10; at Aptera (Baldwin Bowsky 2019: 14, no. 18); hitherto unattested in the Greek East.
7. Calidius (Strigo), rectangular; *OCK* type 487, Arezzo, 15 BC–AD 5; at Knossos (Sackett 1992: 144, no. Y24); 4/42 (9.5%) in Crete (Knossos 1), Achaia (Argos 1, Corinth 1), Egypt (Alexandria/Cairo 1).
8. C. Gavius Summacus, rectangular; *OCK* type 875, Arezzo? 10 BC–AD 10; at Knossos (Hayes 1971: 264, no. 16); 1/10 (10%) in Crete (Knossos 1).
9. Hilarus, rectangular; *OCK* type 953, unknown provenience, 20 BC–AD 20; at Lappa (Baldwin Bowsky and Gavrilaki 2010: 229, no. 47); 3/67 (4.5%) in Achaia (Corinth 2), Egypt (Alexandria/Cairo 1).
10. M. Iulius, radial; *OCK* type 998, Puteoli, 10 BC–AD 10; at Knossos (Sackett 1992: 145, no. Y28); 4/12 (33.3%) in Crete (Knossos 1), Egypt (Alexandria/Cairo 1, Old Cairo 2).
11. Maecius, slave Valens, rectangular; cf. *OCK* types 1080–81, Puteoli, 10+ BC; at Eleutherna (Baldwin Bowsky 2009: 180, no. 10); other slaves 2/5 (40%), in Egypt (Alexandria/Cairo 2).
12. Mur(), rectangular; *OCK* type 1197, central Italy, AD 1+; at Aptera (Baldwin Bowsky 2019: 54, no. 45); hitherto unattested in the Greek East.
13. Naevius (1), external on decorated ware; *OCK* type 1231, Puteoli, AD 1–20; at Aptera (Baldwin Bowsky 2019: 88, no. 93); 1/17 (5.7%) in Achaia (Corinth 1).
14. Naevius (2), rectangular; *OCK* type 1232, Puteoli, AD 1–20; at Aptera (Baldwin Bowsky 2019: 88,

no. 94); 4/44 (9.1%) in Achaia (Athens 1), Egypt (Alexandria/Cairo 2), Arabia (Oboda 1).

15. N. Naevius Hilarus, in *tabella ansata; OCK* type 1250, Puteoli, AD 1+?; at Knossos (Sackett 1992: 198, no. C1.1) and from Crete (*OC* type 1083g, included in *OCK* type 1250); 5/28 (17.9%) in Crete (Knossos 1, Crete 1), Cyrenaica (Berenike 2), Asia (Samos 1).
16. (M.) (Perennius) Tigranus (2), external on decorated ware; *OCK* type 1412, Arezzo, 10 BC–AD 10; at Knossos (Hayes 1983: 138, no. 206); 3/77 (3.9%) in Achaia (Athens 1, Corinth 1), Egypt (Alexandria/Cairo 1).
17. T. Rufrenus, slave Rufio, rectangular; *OCK* type 1732, Arezzo? 15–5 BC; at Knossos (Sackett 1992: 145, no. Y31); 1/45 (2.2%) in Crete (Knossos 1).
18. C. Sa[trius?], rectangular; *OCK* type 1797, Po Valley, Augustan? at Lappa (Baldwin Bowsky and Gavrilaki 2010: 230–231, no. 52); hitherto unattested in the Greek East.
19. (L.) Saufeius, slave Clitus, rectangular; *OCK* type 1808, Arezzo, 10+ BC; at Aptera (Baldwin Bowsky 2019: 172, no. 196); 2/12 (16.7%) in Egypt (Alexandria 1), Asia (Ephesos 1).
20. C. Sentius (1), rectangular; *OCK* type 1861, Etruria? 20 BC–AD 20; at Knossos (Warren 1988: 91) and Lappa (Baldwin Bowsky 2020: 419, no. 7); 13/132 (9.8%) in Achaia (Corinth 4), Egypt (Alexandria 1, Alexandria/Cairo 3), Asia (Notion 1, Samos 1, Smyrna region 1), Arabia (Oboda 2).
21. Serenus (2), rectangular; *OCK* type 1878, Puteoli, 10 BC–AD 10; at Knossos (Hayes 1983: 132, no. 204); 5/27 (18.5%) in Achaia (Athens 2, Corinth 1), Egypt (Alexandria 1, Alexandria/Cairo 1).
22. A. Sestius Dama, rectangular; *OCK* type 1947, Arezzo? 20–1 BC; at Knossos (Warren 1988: 91); 3/20 (15%) in Achaia (Corinth 2), Asia (Kos 1), Syria/Phoenike (Antioch 1).
23. Statilia, slave Canopus, rectangular; *OCK* type 1991, unknown provenience, 20–1 BC; at Knossos (Sackett 1992: 14, no. Y21); 1/22 (4.5%) in Crete (Knossos 1).
24. C. T[ap(urius)]? rectangular; *OCK* type 2036, Puteoli, 10 BC–AD 10; at Knossos (Sackett 1992: 144, no. Y22 and 143, pl. 124); 1/9 (11.1%) in Egypt (Alexandria/Cairo 1).
25. L. Tettius, slave Euticus, rectangular; *OCK* type 2096, Arezzo? 15+ BC; at Knossos (Sackett 1992: 144, no. Y13); hitherto unattested in the Greek East.
26. C. Titius, rectangular; *OCK* type 2170, central Italy, AD 1–20; at Aptera (Baldwin Bowsky 2019: 176, no. 201); 4/48 (8.3%) in Achaia (Corinth 1), Egypt (Alexandria 3).
27. L. Titius, slave Apelles, rectangular; cf. *OCK* types 2204–38 and 2152, of unknown provenience, Augustan?; at Aptera (Baldwin Bowsky 2019: 176, no. 203); hitherto unknown slave.
28. Umbricius + Umbricius, rectangular; *OCK* type 2445, unknown provenience, AD 1+; at Aptera (Baldwin Bowsky 2019: 182, no. 211); 1/4 (25%) in Asia (Smyrna 1).
29. L. Umbricius, slave Felix, radial; *OCK* type 2457, unknown provenience, 20–1 BC; at Knossos (Sackett 1992: 144, no. Y20); 1/6 (16.7%) in Crete (Knossos 1).
30. Zoilus (1), external on decorated ware; *OCK* type 2543, Pisa, 5+ BC; at Knossos (Hayes 1983: 138, no. 207); hitherto unattested in the Greek East.

Bibliography

Primary Sources

Augustus. Res Gestae Divi Augusti. *Text, Translation and Commentary*. Edited and translated by A.E. Cooley. Cambridge: Cambridge University Press, 2009.

Secondary Sources

Alcock, S.E. 1997. The problem of Romanization, the power of Athens, in M.C. Hoff and S.I. Rotroff (eds) *The Romanization of Athens* (Oxbow Monograph 94): 1–7. Oxford: Oxbow Books.

Arnaud, P. 2005. *Les routes de la navigation antique: itinéraires en Méditerrannée*. Paris: Errance.

Baldwin Bowsky, M.W. 2009. Setting the table at Roman Eleutherna: Italian Sigillata stamps from Sector I, in P.G. Themelis (ed.) *Ancient Eleutherna: Sector I,* Vol. 1: 157–196. Athens: Scripta.

Baldwin Bowsky, M.W. 2011. *Colonia Iulia Nobilis Cnosus*, the first 100 years: the evidence of Italian Sigillata stamps, in R.J. Sweetman (ed.) *Roman Colonies in the First Century of Their Foundation*: 117–134. Oxford: Oxbow Books.

Baldwin Bowsky, M.W. 2014. Stamps on Italian Sigillata and the renaissance of Aptera, Crete, *Hesperia* 83: 503–568.

Baldwin Bowsky, M.W. 2016. A context for Knossos: Italian Sigillata stamps and cultural identity across Crete, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 27–41. Oxford: Oxbow Books.

Baldwin Bowsky, M.W. 2019. *Stamps on Terra Sigillata found in Excavations of the Theater of Aptera, Crete.* Oxford: Archaeopress.

Baldwin Bowsky, M.W. 2020. Klio's clay II: more inscribed *instrumenta domestica* from Lappa (Crete), in N. Ch. Stampolidis and M. Giannopoulou (eds) *Πρακτικά Διεθνούς Αρχαιολογικού Συνεδρίου. Η Ελεύθερνα, η Κρήτη και ο Έξω Κόσμος*: 411–420. Athens and Rethymnon: University of Crete, Study Centre Museum of Ancient Eleutherna, Mediterranean Archaeological Society, AMKE 'Nikos Daskalantonakis – NDF'.

Baldwin Bowsky, M.W. and E. Gavrilaki 2010. Klio's clay: inscribed *instrumenta domestica* from Lappa (Crete). *Creta Antica* 11: 173–253.

Casson, L. 1984. *Ancient Trade and Society.* Detroit: Wayne State University.

Comfort, H. 1943. Terra Sigillata from Minturnae. *American Journal of Archaeology* 47: 313–330.

Eiring, J. 2004. The earliest Italian Sigillata at Knossos, in J. Poblome, P. Talloen, R. Brulet and M. Waelkens (eds) *Early Italian Sigillata: The Chronological Framework and Trade Patterns* (BABESCH Annual Papers on Classical Archaeology, Suppl. 10): 71–72. Leuven: Peeters.

Forster, G. 2001. The Roman period, in J.N. Coldstream, L.J. Eiring and G. Forster, *Knossos Pottery Handbook: Greek and Roman* (British School at Athens Studies 7): 137–167. London: British School at Athens.

Forster, G. 2009. Roman Knossos: The Pottery in Context. A Presentation of Ceramic Evidence provided by the Knossos 2000 Project (1993–1995), 2 vols. Unpublished PhD dissertation, University of Birmingham.

Francis, J. 2010. Appendix: The Roman pottery, in A. Vasilakis and K. Branigan (eds) *Moni Odigitria: A Prepalatial Cemetery and Its Environs in the Asterousia, Southern Crete* (Prehistory Monographs 30): 28–46. Philadelphia: INSTAP Academic Press.

Francis, J. 2017. Roman influence on Greek Sphakia, in D.W. Rupp and J.E. Tomlinson (eds) *From Maple to Olive: Proceedings of a Colloquium to Celebrate the 40th Anniversary of the Canadian Institute in Greece, Athens, 10–11 June 2016* (Publications of the Canadian Institute in Greece 10): 515–533. Athens: Canadian Institute in Greece.

Gallimore, S. 2015. *An Island Economy: Hellenistic and Roman Pottery from Hierapytna, Crete* (Lang Classical Studies 18). New York: Peter Lang.

Gallimore, S. 2017. Food surplus and archaeological proxies: a case study from Roman Crete. *World Archaeology* 17: 138–150.

Gallimore, S. 2018. The relationship between agricultural production and amphora manufacture on Roman Crete. *Journal of Roman Archaeology* 31: 373–386.

Gallimore, S. 2019. An island in crisis? Reconsidering the formation of Roman Crete. *American Journal of Archaeology* 123: 589–617.

Hayes, J.W. 1971. Four early Roman groups from Knossos. *Annual of the British School at Athens* 66: 249–275.

Hayes, J.W. 1983. The Villa Dionysos excavations, Knossos: the pottery. *Annual of the British School at Athens* 78: 97–169.

Karanastasi, P. 2015. Νέα στοιχεία για τη ρωμαϊκή Ελεύθερνα, in P. Karanastasi, A. Tzigounaki and C. Tsigonaki (eds) *Αρχαιολογικό Έργο Κρήτης. Πρακτικά της 3ης Συνάντησης, Ρέθυμνο, 5–8 Δεκεμβρίου 2013:* 417–428. Rethymnon: Editions of the School of Philosophy of the University of Crete / Ephorate of Antiquities of Rethymnon.

Kenrick, P.M. 2000. Stamped *Sigillata* from northern Italy: patterns of distribution, in G.P. Brogiolo and G. Oscese (eds) *Produzione ceramica in area padana tra il II secolo a.C. e il VII secolo d.C.: nuovi dati e prospettive di recerca. Convegno internazionale, Desenzano del Garda 8–10 aprile 1999* (Documenti di Archeologia 21): 47–52. Mantua: Società Archeologica Padana.

Lund, J. 2003. Eastern Sigillata B: a ceramic fineware industry in the political and commercial landscape of the eastern Mediterranean. *Varia Anatolica* 15: 125–136.

Lund, J. 2005. An economy of consumption: the Eastern Sigillata A industry in the late Hellenistic period, in Z.H. Archibald, J.K. Davies and V. Gabrielsen (eds) *Making, Moving and Managing: The New World of Ancient Economies, 323–31 BC*: 233–252. Oxford: Oxbow Books.

Malfitana, D. 2002. Eastern Terra Sigillata wares in the eastern Mediterranean: notes on an initial quantitative analysis, in F. Blondé, P. Ballet and J.-F. Salles (eds) *Céramiques hellénistiques et romains. Production et diffusion en Méditerranée oriental (Cypre, Égypte et côtes syro-palestinienne)*: 133–157. Lyon: Maison de l'Orient Méditerranéen-Jean Pouilloux.

Malfitana, D., J. Poblome and J. Lund 2005. Eastern Sigillata A in Italy: a socio-economic evaluation. *Babesch. Bulletin Antieke Beschaving* 80: 199–212.

Marangou-Lerat, A. 1995. *Le vin et les amphores de Crète: de l'époque classique à l'époque impériale* (*Études crétoises* 30). Thessaloniki: Fondation Fany Boutari.

Martinez Fernandez, A. 2007. Fragmento de una inscripción inédita de Aptera en un arquitrabe. *Habis* 38: 153–156.

OC = Oxé, A. and H. Comfort. 1968. *Corpus Vasorum Arretinorum* (Antiquitas, Reihe 3, Abhandlungen zur Vor- und Frühgeschichte, zur klassischen und provinzial-römischen Archäologie 4). Bonn: Habelt.

OCK = Oxé, A., H. Comfort and P. Kenrick. 2000. *Corpus Vasorum Arretinorum,* 2nd ed. (Antiquitas, Reihe 3, Abhandlungen zur Vor- und Frühgeschichte, zur klassischen und provinzial-römischen Archäologie 41). Bonn: Habelt.

Poblome, J. 2004. Italian Sigillata in the eastern Mediterranean, in J. Poblome, P. Talloen, R. Brulet and M. Waelkens (eds) *Early Italian Sigillata: The Chronological Framework and Trade Patterns* (BABESCH Annual Papers on Classical Archaeology, Suppl. 10): 17–30. Leuven: Edition Peeters.

Sackett, L.H. 1992. Roman pottery, in L.H. Sackett (ed.) *Knossos from Greek City to Roman Colony: Excavations at the Unexplored Mansion* II (British School at Athens, Suppl. 21): 147–256. London: Thames and Hudson.

Slane, K.W. 1989. Corinthian ceramic imports: the changing pattern of provincial trade in the first and second centuries AD, in S. Walker and A. Cameron (eds) *The Greek Renaissance in the Roman Empire* (*Bulletin of the Institute of Classical Studies*, Suppl. 55): 219–225. London: University of London.

Slane, K.W. 2004. Corinth: Italian Sigillata and other Italian imports to the early colony, in J. Poblome, P. Talloen, R. Brulet and M. Waelkens (eds) *Early Italian Sigillata: The Chronological Framework and Trade Patterns* (BABESCH Annual Papers on Classical Archaeology, Suppl. 10): 31–42. Leuven: Edition Peeters.

Sofianou, C. and S. Gallimore. 2019. Recent excavations at the small theater in ancient Hierapytna. *Kentro* 22: 13–15.

Tzifopoulos, Y. 2009. The inscriptions, in P.G. Themelis (ed.) *Ancient Eleutherna*: *Sector 1,* Vol. 1: 101–152. Athens: Scripta.

Van Oyen, A. 2016. *How Things Make History: The Roman Empire and its Terra Sigillata Pottery* (Amsterdam Archaeological Studies 23). Amsterdam: Amsterdam University.

Warren, P. 1988. Knossos: Stratigraphical Museum excavations, 1978–1982, Part IV. *Archaeological Reports* 34: 86–104.

Zabehlicky-Scheffenegger, S. 2004. Italische Sigillata in Ephesos, in J. Poblome, P. Talloen, R. Brulet and M. Waelkens (eds) *Early Italian Sigillata: The Chronological Framework and Trade Patterns* (BABESCH Annual Papers on Classical Archaeology, Suppl. 10): 73–80. Leuven: Edition Peeters.

10.

Origanum dictamnus (Dittany of Crete): Testaments, Uses, and Trade of a Sacred Plant in Antiquity

Anna Kouremenos

> Many of the herbs cultivated in the emperor's gardens originate from Crete. Many of the greens, herbs, fruits and seeds on this island cannot be found anywhere else in the world... (Galen *Antidotes* 14).
>
> The main types of wild vegetation in Crete today would be recognised by any Cretan from Late Minoan times onwards. Their proportions and distribution may have fluctuated down the millennia, but not overwhelmingly. Most of the evidence for the historic period could be reconciled with the recent landscape (Rackham and Moody 1996: 130).

Introduction

In Virgil's *Aeneid* (12.415–422), the goddess Venus hastens to heal her wounded son Aeneas while carrying a branch of the plant *dictamus*, better known today as dittany of Crete. The passage illustrates how Venus gathered a few branches of *dictamus* from the peak of Mt Ida and, cloaked in mist, she:

> *carried this plant down and infused with it the waters they had poured into an urn, and added tonic ambrosia, the scented panacea, and nobody knew it. Old Iapyx knew nothing. As he bathed the wound with the water ignorant of its powers – but suddenly all the pain Aeneas had felt vanished, and the wound's bleeding stanched. Then of itself, without anyone freeing it, the arrowhead fell out into his hand and Aeneas was restored to his full strength.*

This passage is beautifully illustrated in a wall painting from the House of Sirico (VII1.25.47) at Pompeii, dated to the 1st century BC (Baker 2015; Felton 2016: 251; Salazar 1999, 2007: 305), where Aeneas, with a visible arrow wound on his right leg and holding his tearful young son Ascanius, is shown being attended by the physician Iapyx while his mother Venus rushes to his side carrying a branch of the sacred plant (**Figure 10.1**) (Kouremenos 2018: 49; Noonan 1997). This image implies that, to the Greeks and Romans, *dictamus* was associated with divinities and with healing and, by extension, Crete itself would have been imagined as a place of healing from various ailments (Kouremenos 2018; Morris and Peatfield 2014).[1] But the passage also elucidates the fact that Venus mixed the plant with ambrosia, the food of the gods, and it was this mixture that was used as a *pharmakon* (medication) to heal her son's wounded leg, not *dictamus* alone.[2] This implies that *dictamus* was often used in concoctions in combination with other plants to treat various ailments, including wounds. It also corroborates the statements of several ancient writers who claim that it had the capacity to rid arrowheads from flesh, whether human or animal (see below).

In antiquity, *dictamus* was considered a panacea, a drug to counter every illness. No less than 21 ancient writers have praised its healing properties (**Table 10.1**), and it is said to have been employed in treating 32 different categories of diseases (Martínez-Francés *et al.* 2015: 400). Although we lack concrete archaeological and literary evidence for many of its uses, it is highly probable that *dictamus* was an important ingredient in aromatic oils, perfumes, cosmetics, and magic potions — often used in combination with other plants and flower essences — and was most likely incorporated into decorative bouquets and gardens in household and temple contexts. The healing properties of this plant gave it a prominent place among Crete's most prevalent exports (Chaniotis 1999; Gallimore 2017; Kouremenos 2018; Rouanet-Liesenfeld 1992), and, although it was traded across the Mediterranean world long before the Roman period, it is likely that the increasingly complex trade routes that characterised the period of the Pax Romana (27 BC–*c.* AD 180) disseminated the plant further than ever before, even if contextualising its presence in the archaeological record is problematic.

What follows is a diachronic history of *dictamus*' etymology, properties, and uses, its close association

[1] For Crete in the *Aeneid*, see Armstrong 2002.

[2] For Venus as physician and healer, see Hawkins 2004; Skinner 2007; for the treatment of wounds in antiquity, see Petridou and Thumiger 2015; Salazar 1999.

Figure 10.1. Wall painting depicting a scene from Virgil's Aeneid.
From the House of Sirico in Regio VII, Insula 1 at Pompeii. 1st century BC.
Naples, National Archaeological Museum.

with the mythology of the island, and its trade across the Mediterranean world and beyond. I argue that despite the relative lack of and difficulty in obtaining information about the plant from archaeological contexts, its presence in various literary sources suggests that it was traded extensively and that non-Cretans considered it not only for medicinal, cosmetic, and decorative purposes but also — given its endemic nature and difficulty in gathering it from the mountainsides and crevices that permeate the island — as an exotic item.

Habitat, classification, and etymology

Dictamus is an aromatic cushion-forming perennial plant in the *Lamiaceae* family (mint family), which is endemic to the island of Crete (Krigas *et al.* 2015: 112). It is characterised by stalks and rounded pale green leaves with trichomes (tiny hair-like components on the surface) and light pink flowers (**Figure 10.2**) (Vrachnakis 2003). It generally grows as a rock-dweller in crevices and rocky habitats and gorges, generally from 300 meters or more, at an altitude ranging from

Figure 10.2. *Dictamus* in full bloom in west Crete
(photo by A. Kouremenos).

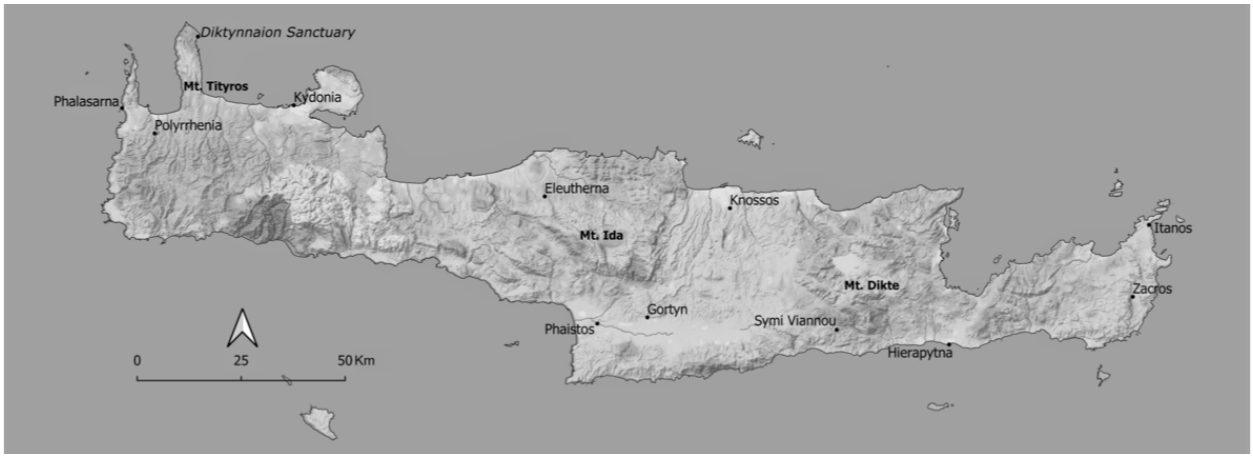


Figure 10.3. Map of Crete with places mentioned in the text (V. Antoniadis).

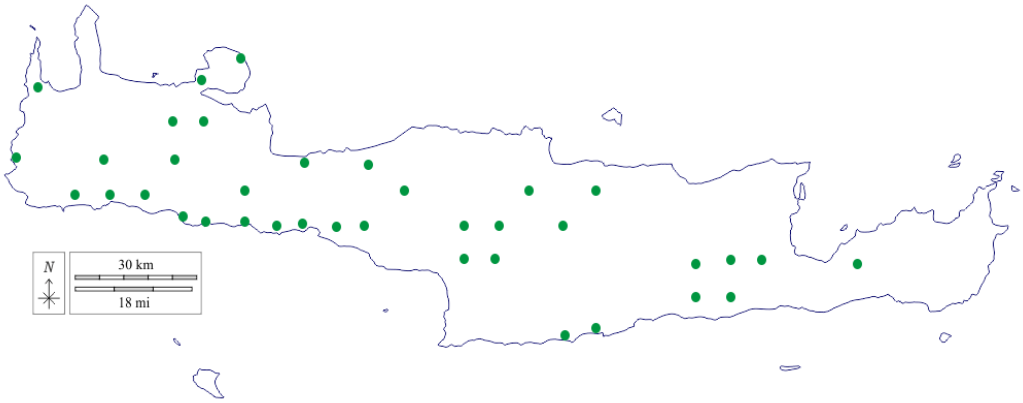


Figure 10.4. Map of Crete showing the distribution of *dictamus* today (location points after www.kretakultur.dk).

500 to 1800 meters above sea level (Kypriotakis 1998; Turland 1995). The plant covers a set of different medicinal species in the *Lamiaceae* family with overlapping therapeutic uses and properties that fall broadly into two groups: *Origanum dictamnus* (dittany of Crete) and *Ballota pseudodictamnus* (false dittany), which has different properties and habitats. The latter plant grows in various locations in southern Greece, southwest Turkey, northwest Egypt, and northeast Libya. It also grows in pots and gardens in Europe and the USA (*Ballota pseudodictamnus (L.) Benth. | Plants of the World Online | Kew Science. Plants of the World Online*; also Martínez-Francés *et al.* 2015). This paper is concerned with the former.

Dictamus probably takes its name from Mt Dikte (**Figure 10.3**), which rises to 2148 meters above sea level in east Crete and was a major center of cult activity from at least the Middle Minoan I period (*c.* 2200–1900 BC). According to one version of Greek mythology, Zeus was born on this mountain and was suckled by the goat Amaltheia; Dikte is one of two mountains consistently cited by ancient writers as the birthplace of Zeus Cretagenes — the other being Mt Ida — but some ancient authors either confused the two mountains together or, as in the case of Apollonius (i.509; i.1129–1132; ii.1234; iii.134), attempted to assimilate them into a single location (Crowther 1988). Thus, the name of the herb has divine connotations and it is possible that the word is a compound derived from ***Δίκτης*** *(Mt Dikte)* and ***θάμνος*** (bush), which would make the bushes on Mt Dikte a prime grazing area for goats like Amalthia. Moreover, we should not exclude the possibility that the name of the plant (and the mountain) derives ultimately from one of the pre-Greek languages that were prevalent on the island in the Bronze Age, namely Eteo-Cretan, Kydonian, or Pelasgian (Homer *Od.* 19.169–74; Kouremenos 2018: 41–42), even if all three remain undeciphered. Of the three languages, Eteo-Cretan is the best-known from inscriptions, most of which have been found in east Crete (Brown 1984; Duhoux 1982; Gordon 1975).

An alternative hypothesis suggests that *dictamus* was named after the Cretan goddess Diktynna, who was worshipped on the island as well as at Sparta and Phokis in mainland Greece (Strabo 3.12.8, 10.36.3) until well into the Roman period and was the patron goddess of women and childbirth. Given that one of *dictamus*' medicinal properties was to aid the pains of women in

Figure 10.5. *Dictamus* in the garden of the Getty Villa, Malibu, California (photo by M. Vickers).

childbirth as well as to treat feminine ailments such as amenorrhea, this etymology seems just as promising as the former. Her image appears on the coins of several cities on the island, including Kydonia, Phalasarna, and Polyrrhenia (Svoronos 1890). There were temples to Artemis Diktynna in western Crete (Mt Tityrus, Diktynnaion sanctuary, Polyrrhenia) that operated until the late-Roman period (Strabo 10.4.12; Philostratus, *VA* 8.30; also Chaniotis 2013; Sporn 2013).

Today, *dictamus* is widely distributed on the island, with more dense populations on the western part (**Figure 10.4**) (Liolios 2010: 230), but since Mt Dikte is located in eastern Crete, it is possible that the plant grew more abundantly in the eastern part of the island in antiquity or that local communities made more extensive use of it in that region at some point in time. Although extant ancient sources do not reference specific areas of the island as main habitats, the fact that ancient writers refer to *dictamus* as an exclusively *Cretan* plant and do not associate it with a specific polis or area on Crete suggests that it grew all over the island in antiquity, as it does today. Indeed, several ancient sources mention Mt Ida in central Crete as one of its habitats, and the plant also grows in higher altitudes in the western parts of the island.

Various attempts have been made throughout the centuries to grow the plant outside Crete, both in the wild and in more controlled environments, such as gardens and pots. In the 15th century, the Venetian rulers of the island attempted to grow the plant in Italy but their efforts were unsuccessful (Harvey 1981; Platakis 1951). Later, attempts were made to grow *dictamus* in Athens but they too failed as the plant lost its fragrance and colour (Platakis 1951). The only location outside Crete to grow *dictamus* successfully in the wild is the island of Kythera, located only nineteen nautical miles north of Crete and featuring a similar environment and topography as its much larger neighbour. More recent attempts at growing the plant in gardens in Europe and the USA have proven successful.[3] Among other locations, the herb garden of the Getty Villa in Malibu, California, reproduces plants and flowers of the Mediterranean that were prevalent in gardens of Greek and Roman houses (**Figure 10.5**). One of these plants is *dictamus*, which grows next to its close relatives, sweet marjoram (*Origanum majorana*) and classic oregano (*Origanum vulgare*) (Bowe and DeHart 2011; d'Andrea 1982). In the Cloisters branch of the Metropolitan Museum of Art in New York, the Cretan plant has also been successfully cultivated in pots but with great difficulty and after many failed attempts, according to the curator.[4]

Given the successful attempts at growing *dictamus* outside the island in gardens and pots and following Galen's assertion that Cretan plants grew in the garden of the emperor Marcus Aurelius, it is thus probable that *dictamus* was present among the plants in Roman gardens (Bowe 2004; Heilmeyer 2007; Jashemski *et al.* 2017), particularly those in elite houses whose owners could afford to import and grow exotic plants. The Romans were also fond of garlands in both household and public contexts, and *dictamus* was probably employed in such floral arrangements due to its pliability and the pastel colour of its leaves and flowers (Pliny, *HN* 21.53). Pliny refers to the use of two types of oregano for making garlands, one that lacked seeds, and a second, known as Cretan oregano (i.e. *dictamus*), for its pleasant aroma (d'Andrea 1982: 66). Unfortunately, identifying *dictamus*

[3] Leadley 1996 lists seven botanical gardens that contain *dictamus*: The Botanische Tuin Elsloo Garden in the Netherlands; The Royal Botanic Gardens at Kew, UK; The Royal Horticultural Society's Garden, UK; Botanischer Garten der Universität Bonn, Germany; University of Aarhus Botanical Institute, Denmark; National Botanic Gardens, Ireland; and The Berry Botanic Garden, Oregon, USA. The author does not mention the garden of the Getty Villa in Malibu.

[4] <https://blog.metmuseum.org/cloistersgardens/2010/08/06/right-dittany-white-dittany/>. Retrieved 2019-5-27.

Author	Work(s) that reference *dictamus*
Hippocrates	*Diseases of Women*
Euripides	Scholia in *Hippolytus*
Aristotle	*History of Animals*
Theophrastus	*Enquiry into Plants*
Antigonus of Carystos	*Collection of Wonderful Tales*
Cicero	*On the Nature of the Gods*
Virgil	*Aeneid*
Dioscorides	*De Materia Medica*
Plutarch	*Moralia (on the Intelligence of Animals; Animals are Rational)*
Pliny	*Natural History*
Celsus	*On Medicine*
Rufus of Ephesus	*Medical Questions*
Soranus of Ephesus	*Gynaecology*
Valerius Maximus	*Nine Books of Memorable Deeds and Sayings*
Galen	*Methods of Medicine; Antidotes*
Pseudo-Apuleius	*Herbarius*
Alexander of Aphrodisias	*Medical Questions*
Hesychius	*Alphabetical Collection of All Works*
Tyrannius Rufinus	*Corpus Christianorum*
Isidorus of Seville	*Etymologies*

Table 10.1. List of ancient authors and their works that mention *dictamus* (compiled by A. Kouremenos).

as one of the plants in well-known Roman frescoes that depict garden scenes is impossible given that the shape and colour of its leaves are so similar to those of other plants.

As will become evident in the following pages, *dictamus* appears to be omnipresent in several antique contexts despite the difficulty in identifying it but, as archaeologists are fond of stating, the absence of evidence does not necessarily equal the evidence of absence.

Uses

As an endemic plant that was prized for its healing properties and associated with divinities, *dictamus* must have been considered rather exotic to those living outside the island of Crete. What follows is a list of ancient writers that reference *dictamus* in their extant works, starting with Hippocrates (5th–4th century BC) and ending with Isidorus of Seville (5th–6th century AD) (**Table 10.1**). Since there are numerous references in these works and citing each one separately would require a catalogue, which is beyond the scope of this paper, I have only included the title of each author's work that mentions *dictamus*.

A few modern scholars have attempted to trace the first reference to *dictamus* to Homer's *Iliad* (Diapoulis 1980; Liolios *et al*. 2010; Skrubis 1979), where a passage describes the treatment of Eurypylus' battle wound (11.842–848):

> *There Patroclus made him lie at length, and with a knife cut from his thigh the sharp piercing arrow, and from the wound washed the black blood with warm water, and upon it cast a bitter root, when he had rubbed it between his hands, a root that slayeth pain, which stayed all his pangs; and the wound waxed dry, and the blood ceased.*

The point of interest in the above passage is the medicine used to heal the wound and the pain experienced by the Achaian warrior. Although it is tempting to suggest that the bitter root cited in the passage might describe *dictamus*, given its properties as a healer of arrow wounds, the plant is not explicitly named, and it is simply speculative to suggest that the root of the Cretan plant was employed in the treatment of the wound, since several other plant roots could have served similar purposes. Furthermore, Aristotle explicitly states that the aerial parts of *dictamus* were used for the expulsion of arrow wounds from the flesh (Aristotle, *HA* 612a4), and in the wall painting from Pompeii, only the leaves of the plant are visible in Venus' hand. Note also that the passage states that he cut out the arrow from his thigh, unlike the arrow of Aeneas, which fell out of the wound by itself.

The earliest of the medicinal references is by Hippocrates (5th–4th century BC), who considered the plant useful for the treatment of stomach aches and other problems of the digestive system, as a poultice for healing wounds, and for inducing menstruation and abortion (Hippocrates 7.348). In *The History of Animals* (612a4), Aristotle states that when wild goats in Crete are wounded by arrows, they go in search of *dictamus*, which is supposed to have the property of ejecting arrows in the body. This assertion is echoed by Theophrastus in his *Enquiry into Plants* (9.16.1) where he notes that *dictamus* was peculiar to Crete, and that it was 'said to be true, that, if goats eat it when they have been shot, it rids them of the arrow'. One wonders whether this ejective property of the plant also worked for other animals, such as deer, which were sacred to the goddess Diktynna and her equivalent Artemis.

The plant was also used in antiquity as an aphrodisiac and as a treatment for tuberculosis, gastric ulcers, rheumatism, digestive and gall bladder issues, and as a facilitator of childbirth (Harrison 1993; Liolios *et al*. 2010; Oikonomakis 2002; Platakis 1951). Ancient writers do not indicate which part of the plant was used to treat these ailments, but Celsus states that *dictamus* was often mixed in wine or water and ingested, perhaps in combination with other herbs, that its root was used as a salve to treat sciatica and skin disorders, and that the juice was consumed in wine to cure snake bites (Celsus, *Med.* V; Skoula and Kamenopoulos 1996: 26). The 1st-century AD physician Dioscorides states that the dried herb, rubbed between the hands into a meal and mixed with a little wine, could be spread on the body to repel serpents (Dioscorides, *De Materia Medica* 3). The smell of *dictamus* also possessed the ability to drive away poisonous creatures, although in a curious statement, Pliny dismisses as prejudice the assertion that the further away from the island *dictamus* travelled the weaker its healing powers became (Heilmeyer 2007: 42).

Thus, given its many medicinal properties, it is not surprising that *dictamus* was a prized plant in Crete, but it was probably even more so outside the island. It has been argued that there is no direct evidence for the export of medical plants from Crete before the Roman period, at which point there was a surge in such exports that was partly controlled by the emperor (Chaniotis 1999: 210; Rouanet-Liesenfelt 1992; van Effenterre and Rouanet-Liesenfelt 1995). This is false, since there is literary evidence that the Egyptians obtained *ceterach*, *daucus*, and *dictamus* from Crete (Glotz 1953: 388), although it is unclear how far back this trade commenced; Baumann (1986) states that *dictamus* was widely exported from the 5th century BC onwards, which seems to be a rather late date.

Neither *ceterach* nor *daucus* are endemic to the island, and we may surmise that, like *dictamus*, they were used for medicinal purposes by Egyptians and others; it is also likely that, in addition to being used in medicinal preparations, *dictamus* was employed in the perfume and cosmetics industry for which Egypt was renowned (Manniche 1999; Mohamed 2003). Furthermore, Hippocrates references the plant multiple times in his writings and cites poultices containing *dictamus* that he used for the treatment of his patients on the island of Kos and at Larissa in Thessaly, thus clearly indicating that it was exported from Crete at least since the Classical period.

The aroma of *dictamus* can be described as a cross between oregano, mint, and marjoram. Hence, it was used in aromatic oils and perfumes in combination with other plants and flower essences, although physical evidence for its presence in such contexts is lacking. There is evidence, however, for an extensive Cretan perfume industry dating back to at least 2000 BC (Vlazaki 2010; Voudouri and Tesseromatis 2015), and *dictamus* was almost certainly used in perfumes and aromatic oils originating on the island as well as exported for similar uses elsewhere in the Mediterranean. Although a few modern scholars have attempted to connect *dictamus* with Minoan and Mycenaean royalty, with claims that the essential oil of the plant was presented as an offering to Minoan kings and priests, such assertions are problematic since there is a complete lack of archaeological and literary evidence to support them (Berendes 1889; Faure 1987; Skoula and Kamenopoulos 1996). It is also probable that *dictamus* was part of cosmetic concoctions, specifically moisturisers, due to its soothing, antioxidant, and anti-bacterial properties. Moisturisers for the face and body sold in Cretan souvenir and beauty shops today promote the use of local organic plants and herbs, and *dictamus* is often one of the main ingredients. Therefore, given its endemic nature and properties, it is likely that it was used for similar cosmetic purposes in antiquity.

Finally, we must consider the possibility that *dictamus* was used in magic potions and religious rituals, since the versatility of the plant and its divine associations would have made it ideal for use in such contexts. Like mint and oregano, the scent of *dictamus* possesses properties that calm the nervous system, thus making it ideal for ritual use and perhaps also as part of decoration in temples. Since the plant was associated with Diktynna and other goddesses with whom she was equated — Artemis, Eileithyia, Britomartis — it is highly probable that *dictamus* was one of the plants employed in temples and religious rituals associated with these goddesses and may have been dedicated by pregnant women or those suffering from feminine ailments.

Figure 10.6. Reconstructed fragments of the 'Fresco of the Garlands' from a house at Knossos, dated to the Late Minoan 1B period. The second garland from the left may depict *dictamus* (redrawn after Warren 1985: pls 1a, 1b).

Dictamus in artistic and archaeological contexts

As noted above, identifying *dictamus* in ancient art is challenging, mainly because the shape of the plant's leaves is rather generic and can easily be confused with many other plant species (Jashemski 1999). Even in the Pompeii mosaic, where the identification is secure since the wall-painting illustrates an episode from the *Aeneid*, the oblong rendering of its leaves does not make it obvious that it is a representation of *dictamus*. In fact, one has to wonder whether the artist was familiar with the plant or whether he simply painted a generic version of a plant and its leaves.

While *dictamus* has not been securely identified in Minoan art, it is probably depicted in the 'Fresco of the Garlands,' a section of wall painting from a house at Knossos with a destruction date in the Late Minoan 1B period (*c.* 1450 BC) (**Figure 10.6**) (Warren 1985). The wall painting, found face down between the north wall of the room and the paved construction to the south, depicts five circular garlands composed of flowers and plants (see Warren 1985: 190). Garland 2 comprises a pale blue hoop with darker blue leaves on each side. The leaves have been identified as either ivy or *dictamus*, with the latter being the stronger possibility due to their heart shape and pale bluish-green colour and large number of the leaves (Warren 1985: 193–194). If this fresco indeed depicts a garland of *dictamus*, it would be the earliest example of the plant in art known thus far. To my knowledge, the plant has yet to be identified in post-Minoan art on the island as well as in the wider Greek world, despite its prevalence throughout antiquity.

Identifying *dictamus* in archaeological contexts is fraught with difficulty for the obvious reason that archaeobotanical material rarely survives in contexts that are not characterised by low humidity and low oxygen. McGovern and Hall (2016) note that the best conditions for archeobotanical preservation can be found deep underwater, in bogs, at high elevations or northern latitudes where materials are encased in ice and snow, in deserts, and in well-sealed and/or specially improvised contexts of human construction or processing, such as tombs and mummification. Diapoulis (1949) mentions the presence of *dictamus* seeds in the ruins of the Minoan palaces at Knossos and Zakros as well as in the Mycenaean palaces at Mycenae and Pylos, but this claim must be taken with some scepticism, as archaeobotanical material recovered from these excavations were not systematically recovered and stored (Sarpaki 2012), and residue analysis has only recently become available (Weiss and Kieslev 2008); additional information about specific contexts for the finds is not available. These seeds were supposedly associated with *Artemisia absinthium* (wormwood), *Salvia triloba* (Greek sage) and others.

Since the deity Diktynna was often syncretised with the local Cretan goddess Britomartis as well as with Artemis and Ilithyia in antiquity,[5] one would expect the plant to be represented in artistic depictions of the goddess, but to my knowledge, no such depictions have been found (Huxley 1971; Karanastasi 2017; Nosch 2009). Nor can the herb be identified on coins of various cities on the island and of the Cretan Koinon that bear either her image or that of the deities with whom she was equated (Sidiropoulos 2004; Svoronos 1890; Wroth 1884).

This absence is puzzling, since a *scholium* on a passage in Euripides' *Hippolytus* suggests that Artemis wore a crown of *dictamus*, even if the passage itself does not mention the plant explicitly (73.46):

> *Mistress, I bring you this woven garland which I have fashioned from an unravaged meadow, where no herdsman chooses to graze his animals nor has iron ever passed there, but in the springtime the bee traverses the unravaged meadow and nurtures it with river waters; those who have no share in the taught, but in their natures sophrosyne has its place in all things for all time – these may pluck [from the meadow], but for the wicked it is not permitted. Mistress of mine, receive from a pious hand a wreath to bind your golden hair. Alone of men do I enjoy this privilege, for I keep company with you and converse with you, hearing your voice, though I do not see your face. May I end my life as I have begun it.*

The *scholium* on this passage suggests that statues of the goddess were sometimes crowned with fresh

[5] But see Diodorus Siculus (5.76.3), who stresses that Diktynna was a separate deity.

dictamus rather than its sculpted counterpart, and thus would not survive in the extant statues of the goddess. Unfortunately, only future organic residue analysis on the sculptural depictions of the goddess could confirm this assertion (Evershed 2008; Gallimore 2017; McGovern and Hall 2016). Note, however, that an alternate name for *dictamus* in antiquity was *artemidion* (the plant of Artemis) according to Dioscorides (*De Materia Medica* 3.37), thus cementing its close connection with Artemis Diktynna.

Dictamus was one of the herbs used in mixtures of Cretan and other types of Greek wine. In the Roman period, for which we have the most extensive evidence, Cretan wine was exported throughout the empire and perhaps beyond its borders (Hadjisavvas and Chaniotis 2012; Gallimore 2016; 2017; Kouremenos 2018; Marangou 1999). Of the various types of wine produced on the island, *aromatikos* was one of the most popular and was produced with an assortment of herbs. Palladius, a 4th-century AD agricultural writer, states that Crete was the first location to use aromatics in its wine, implying that this practice must have predated the Roman period by many centuries (Fitch 2013: 197). Given both its medicinal and aromatic properties, *dictamus* must have been one of the herbs included in such mixtures. Furthermore, a type of Cretan wine known as *passum* was considered 'the poor man's wine,' according to the Roman poet Martial (13.106), and was frequently mentioned in medicinal texts, often as a base for therapeutic preparations (Chaniotis 2017: 144–146; Gallimore 2016; Hadjisavvas and Chaniotis 2012; Kouremenos 2018: 50–51; Marangou 1999). It is therefore likely that amphoras carrying *passum* flavoured with herbs, including *dictamus*, were exported both for recreational and medicinal uses.

Although the contents of Cretan wine amphora have not been extensively studied, an analysis of remnant DNA inside Classical/Hellenistic period amphoras from shipwrecks archived at the Ministry of Culture and Tourism Ephorate of Underwater Antiquities in Athens indicated that the contents were various combinations of olive, grape, juniper, terebinth (mastic), pine, and herbs in the *Lamiaceae* family (mint, rosemary, thyme, oregano, sage) (Foley *et al.* 2012). Although *dictamus* is not explicitly cited in these examples, it is probable that it was also used as a flavouring in Cretan and other wines since its close relatives – oregano and mint – were commonly mixed with wine. Furthermore, even though we lack direct archaeological and literary evidence, we must not exclude the possibility that some varieties of Cretan olive oil were also infused with herbs, including *dictamus*.

Storage and transportation

Ancient sources are silent about the storage and transportation of herbs and plants in antiquity. Galen mentions that Cretan plants arrived in Rome and other parts of the empire every year in the summer (*On Antidotes* 14), presumably after many of them had been dried for several days on the island. Unfortunately, most of the containers that may have been used for the transportation and storage of *dictamus* and other plants have perished or are often difficult to identify in the archaeological record. Therefore, scholars must attempt to piece together material from disparate sources and conduct ethnoarchaeological research with local communities that still cultivate and export *dictamus*. The latter method is certainly not without its problems, and there should be an element of caution when associating modern modes of storage and transportation with those of antiquity. However, in the absence of direct evidence from antiquity itself, and the fact that we are inquiring about the storage of local organic materials that have not been altered significantly through time, it is an instructive exercise.

In the rather remote, mountainous village of Polyrrhenia in northwest Crete, where *dictamus* is plentiful in the surrounding mountains and gorges, local inhabitants informed me that they gather the plant while it is in full bloom from June to August and dry it by hanging it upside down on clothes lines or by laying it out in wooden racks. It is likely that in the Hellenistic and Roman period the harvesting season was similar to today, even if the climate may have differed slightly and may have either lengthened or shortened the time of harvesting (Moody 2016). When I inquired about storage, they stated that they usually store *dictamus* with the stalks in large, glass jars in a cool, dry place. In the village of Symi Vianou in eastern Crete, I was informed that the locals collect the plant in early August and lay it out on the ground to dry for several days. Then they store it either in glass jars or, alternatively, in empty pillowcases. Thus, the harvesting season for *dictamus* is between June and August today, and the plant is usually stored in glass containers or stuffed into cloth after being dried. Both glass and cloth keep the dried contents away from moisture, dust, and insects. Interestingly, none of the local people I interviewed mentioned ceramic storage jars, but we cannot exclude this mode of storing plants by either modern or ancient communities. Leather and wooden containers may have also been employed for such purposes but are difficult to identify in the archaeological record.

Although the main storage method for transporting and selling *dictamus* today is plastic bags and containers, in antiquity, when boats would have carried large cargoes across the Mediterranean, durable and waterproof material would have been needed for transportation. Rouanet-Liesenfeld states that after Cretan plants were collected in the wild, they were wrapped in cheaply made, coarse papyrus for transport (Rouanet-Liesenfeld 1992), presumably after being dried (Twede

2005). A type of papyrus known as *charta emporetica* was used by merchants for wrapping merchandise (Twede 2005), but it is unlikely that this was the only or even the most prevalent method of packing and transporting herbs. It is likely that ceramic vessels sealed with resin or wax (Mayyas *et al.* 2012; Sparkes 2013: 85) or wooden containers may have also been used to transport *dictamus* and other dried plants and their seeds. In cases where cargo was transported overland by horses or donkeys or — as in the case of the Sahara — by camel across the desert, cloth alone may have sufficed.

Dictamus in trading networks from the Hellenistic period to late antiquity

If the difficulty in gathering *dictamus* from cliffs and gorges and the high prices that the plant commands today are an indication, purchasing an exotic medicinal plant in antiquity must have been similarly pricey. Crete possesses around two hundred species of endemic plants (Mannion and Vogiatzakis 2007), some of which were exported throughout the Hellenistic and Roman world. Unfortunately, we lack literary and epigraphic sources for intensive trade in Hellenistic Crete, and even though it is certain that *dictamus* and other plants were exported from the island, it is difficult to surmise who was in charge of their collection and who profited from the sale of these plants. A more complete picture emerges for the Roman period. Given the large population of the Roman Empire, one would posit that the demand for medicinal and aromatic plants was greater during that period for the simple reason that consumption expanded to a larger number of people, and trading networks were far more complex than preceding periods. However, any potential conclusions about the export of plants from the island must remain speculative due to the relative lack — until recent years — of studies of archaeobotanical material from archaeological sites.

In addition to *daucus* (which includes the wild carrot) and *caterach* (rustyback fern) that the Egyptians imported from the island, some other plants that Crete is known to have exported in antiquity include oregano, thyme, marshmallow (*Althea officinalis*), Cretan birthwort (*Aristolochia cretica*), yellow gentian, anise, and myrtle (Chaniotis 1999: 219–220; Harrison 1992; Kouremenos 2018: 49–50; Rouanet-Liesenfeld 1992). The fruit (and perhaps the leaves) of myrtle were used to flavour a type of Cretan wine called *myrtites*, which was one of the six most popular types of wine exported from the island (Hadjisavvas and Chaniotis 2012: 169; Kouremenos 2018: 50).

It is not known who was in charge of collecting plants in the Minoan and Mycenaean period, but their collection has been attested for Minoan Crete (Chaniotis 1999; Warren 1985). In the Archaic period (800–479 BC), the collection of plants was usually connected to shepherding activities, as the case of the sage Epimenides suggests (Diogenes Laertius 1.109, 112). However, given Crete's social system from the Archaic to the Hellenistic period, which was characterised by communal ownership of land and an agrarian economy geared towards the funding of communal meals of citizen males held in *andreia* (men's club houses) known as *syssitia*, it is likely that the selling of plants was controlled by individual cities and that at least part of the profit from their sale went toward funding these meals (Chaniotis 2008; Kouremenos 2018). It has been argued that the *syssitia* were funded by three sources: agricultural produce and livestock, public revenues, and from tribute paid by the serfs (Aristotle, *Pol.* 2.10.8.1272; also Chaniotis 1999: 194).[6] Even though the evidence is scanty, it appears that Cretan cities made a profit before the Roman period through mobilising their male citizens to serve as mercenaries in foreign armies, through piracy, and finally, through the sale of the island's chief products: wine, olive oil, honey, murex, and, aromatic and medicinal plants (Chaniotis 1999, 2008; De Souza 1998; Kouremenos 2018). After Crete's incorporation into the Roman Empire in 67 BC and its unification into a single province with Cyrenaica, it appears that emperors were involved in the exportation of Cretan medicinal plants to Rome (Chaniotis 1999: 210); in fact, the plants would be collected by special 'root cutters' that were sent by the emperors specifically for this purpose (Galen 15.211; also Clark 2016; Harrison 1993: 109–118; Rouanet-Liesenfeld 1992). Thus, the botanical importance of the island continued unabated in the Roman period and beyond.

Price data for foodstuffs in antiquity is rarely preserved, and this absence is even more evident in the case of plants. We can only infer that prices were fixed according to the rarity of particular plant types and that *dictamus*, being endemic to the island and difficult to gather, would have probably been one of the most expensive plants exported outside the island, just as it is today. If Pliny's ranking of *dictamus* among the top products of Crete is an indication (*HN* 25.92), the plant was likely among the top earners in the trade of the island's products (Harrison 1993: 117–118).

Conclusion

Although we have a plethora of descriptions of *dictamus* starting from the 5th–4th centuries BC, very few depictions of the plant have survived from antiquity and even if more do exist, it is difficult to identify the plant due to its close resemblance to mint and other

[6] On the basis of Aristotle's passage, the latter argues that the *syssitia* were probably funded partly by the unfree population and partly from the contributions of their members, who paid a portion of their income from farming and animal husbandry.

species in the *Lamiaceae* family. One exception is the wall painting from the House of Sirico at Pompeii, which depicts a scene from the *Aeneid*, but even in this context, without prior knowledge of the story in the Vergilian epic, one would not necessarily identify the branch in Venus' hand as *dictamus* since the leaves have a rather generic appearance that can be easily confused with those of many other plants. Fortunately, the replication in the fresco of the well-known passage where the plant is explicitly mentioned makes this attribution secure.

At least 20 ancient writers mention the various properties associated with the plant, ranging from its being an anodyne to feminine ailments to curing snake bites and expelling arrows from the body. In the Hellenistic and Roman periods, Crete was a major exporter of aromatic and medicinal plants. *Dictamus* was probably one of the most widely traded plants and, given its endemic nature, must have been seen as exotic by people living outside the island. Unfortunately, we lack information about the price it commanded in Hellenistic and Roman era markets but, given its rarity, it must have been more expensive than the many other herbs that were frequently exported from the island.

In the absence of surviving material from antiquity pertaining to the storage and transportation of *dictamus* and other plants, we have to rely on the few extant literary references and ethnoarchaeology with contemporary village communities in Crete to draw potential conclusions. With the exception of the modern material of plastic, storage methods do not differ significantly from those of antiquity. The chief methods of storage in household contexts would have been in cloth, ceramic containers, or wooden boxes. Transporting dried *dictamus* across the sea would have probably been easier in cloth and ceramics or wood, but there is also evidence that cheap papyrus was used to wrap various types of merchandise in antiquity.

Dictamus is one of the omnipresent products in Cretan trade but, like all plants, it does not survive well in the archaeological record. We know from historical sources that it was transported to other parts of the Mediterranean and beyond but tracing its presence among other types of plants and herbs in the archaeological record is proving difficult. Residue analysis from shipwreck amphoras suggests that *dictamus* may have been one of the herbs used to flavor wines — especially the Cretan types known as *aromaticos* and *passum* — but residue recovered from amphora interiors indicates that the herbs in the wine are part of the wider *Lamiaceae* family, which includes mint and oregano. Residue analysis from more wine amphoras as well as perfume bottles will likely reveal that *dictamus* was one of the plants used in aromatic beverages and elixirs, and that it was mostly used in conjunction with other herbs as well as various types of flowers rather than as a single ingredient in such preparations.

Unfortunately, we do not have enough information to consider whether *dictamus* was exported at the same rate around the Mediterranean from the late-Hellenistic to the late-antique period, or if the markets for the plant were similar to those of earlier periods, but the increasing connectivity of Crete with other parts of the Mediterranean from the late-Hellenistic period onwards — and a growing population in the Roman empire that would have consumed more plants and their by-products — would have probably intensified the desire of populations outside this island for this exotic plant. Thus, although it is difficult to identify *dictamus* in artistic and archaeological contexts, the fact that it is mentioned by over 20 Greek and Roman authors, was exported since at least the Classical period, and likely reached more people than ever under the Roman empire, makes it a plant whose presence was both ubiquitous and highly prized in the ancient world. Further excavations, archaeobotanical studies, and residue analysis will undoubtedly produce more information about this multi-faceted plant and its presence in archaeological and artistic contexts in antiquity.

Acknowledgements

This paper is dedicated to the memory of Costis Davaras (1933–2021), who kindly provided information about the traditional uses of *dictamus* on Crete and help with tracking down earlier publications. I thank Jane Francis and Michael Curtis for the invitation to contribute this paper to the volume and Michael Vickers for providing information about the garden of the Getty Villa. I am indebted to Jennifer Moody and Peter Warren for reading earlier drafts of this paper and to David Capps for the observation about the *dictamus* leaves represented in the House of Sirico fresco.

Bibliography

Primary Sources

Alexander of Aphrodisias. *Medical Questions*. Translated by R.W. Sharples. London: Duckworth; Ithaca: Cornell University Press, 1992.

Antigonus of Carystus. *Collection of Wonderful Tales*, in O. Keller (ed.) *Rerum Naturalium Scriptores Graeci Minores*, Vol. 1. Leipzig: Teubner, 1877.

Apollonius Rhodius. *Argonautica.* Translated and edited by W.H. Race. Loeb Classical Library 1. Cambridge: Harvard University Press, 2009.

Aristotle. *History of Animals*, Vol. 1: Books 1–3. Translated by A.I. Peck. Loeb Classical Library 437. Cambridge: Harvard University Press, 1965.

Aristotle. *Politics*. Translated by H. Rackham. Loeb Classical Library 264. Cambridge: Harvard University Press, 1932.

Celsus. *On Medicine,* Vol. 2: Books 5–6. Translated by W.G. Spencer. Loeb Classical Library 304. Cambridge: Harvard University Press, 1938.

Cicero. *On the Nature of the Gods*. Translated by H. Rackham. Loeb Classical Library 268. Cambridge: Harvard University Press, 1933.

Dioscorides. *De Materia Medica*. Translated and edited by L.Y. Beck. Hildesheim: Olms, 2017.

Diogenes Laertius. *Lives of Eminent Philosophers*, Vol. 1: Books 1–5. Translated by R.D. Hicks. Loeb Classical Library 70. Cambridge: Harvard University Press, 1925.

Diodorus Siculus. *Library of History,* Vol. 3: Books 4.59–8. Translated by C.H. Oldfather. Loeb Classical Library 340. Cambridge: Harvard University Press, 1939.

Euripides. *Argumentum Hippolyti*, in E. Schwartz (ed.) *Scholia in Euripidem* (*scholia vetera*), 2, 73.46. Berlin: Reimer, 1891.

Galen. *On Antidotes,* in K.G. Kühn (ed.) *Claudii Galeni Opera Omnia*, Book 14. Leipzig: prostat in officina libraria Car. Cnoblochii, 1821–1833.

Galen. *Method of Medicine*, Vol. 1: Books 1–4; Vol. 2: Books 5–9; Vol. 3: Books 10–14. Translated by I. Johnston and G.H.R. Horsley. Loeb Classical Library 516, 517, 518. Cambridge: Harvard University Press, 2011.

Hesychius. *Alphabetical Collection of All Words (Lexicon)*, 5 vols. Translated by M. Schmidt. Jena: n. p. 1858–1868; Amsterdam: reprinted by Neudruck, 1965.

Homer. *The Iliad*. Translated by A.T. Murray, 2 vols. Loeb Classical Library 170, 171. Cambridge: Harvard University Press, 1924–1925.

Homer. *The Odyssey*, Vol. 2: Books 13–24. Translated by A.T. Murray; revised by G.E. Dimock. Loeb Classical Library 105. Cambridge: Harvard University Press, 1919.

Hippocrates. *Diseases of Women*, Vol. 11: Books 1–2. Edited and translated by P. Potter. Loeb Classical Library 538. Cambridge: Harvard University Press, 2018.

Isidorus of Seville. *Etymologies* (*Corpus Glossariorum Latinorum).* Edited by G. Goetz. Leipzig: University of Leipzig Publications, 1894.

Martial. *Epigrams*, Vol. 3: Books 11–14. Translated by D.R. Shackleton Bailey. Loeb Classical Library 480. Cambridge: Harvard University Press, 1993.

Philostratus. *Life of Apollonius*, Vol. 2: Books 5–8. Translated by C.P. Jones. Loeb Classical Library 17. Cambridge: Harvard University Press, 2005.

Pliny. *Natural History*. 10 vols. Translated by H. Rackham. Loeb Classical Library 330, 352, 353, 370, 371, 392, 393, 418, 394, 419. Cambridge: Harvard University Press, 1938–1952.

Plutarch. *Moralia,* Vol. 12*: Concerning the Face Which Appears in the Orb of the Moon. On the Principle of Cold. Whether Fire or Water Is More Useful. Whether Land or Sea Animals Are Cleverer. Beasts Are Rational. On the Eating of Flesh.* Translated by H. Cherniss and W.C. Helmbold. Loeb Classical Library 406. Cambridge: Harvard University Press, 1957.

Pseudo-Apuleius. *Herbarius* (*Heilkräuterbuch)*. Translated by K. Brodersen. Wiesbaden: Marix, 2015.

Rufus of Ephesus. *Medical Questions*. Collected writings in C. Daremberg and C.E. Ruelle (eds) *Oeuvres de Rufus d'Ephèse*. Amsterdam: Adolf M. Hakkert, 1963.

Soranus of Ephesus. *Gynaecology*. Translated by O. Temkin. Baltimore: Johns Hopkins University Press, 1991.

Strabo. *Geography,* Vol. 3: Books 6–7; Vol. 5: Books 10–12. Translated by H.L. Jones. Loeb Classical Library, Cambridge: Harvard University Press, 1923–1934.

Theophrastus. *Enquiry into Plants,* Vol. 1: Books 1–5. Translated by A.F. Hort. Loeb Classical Library 70. Cambridge: Harvard University Press, 1916.

Tyrannius Rufinus. *Corpus Christanorum. Series Latina*, 20. Turnhout: Brepols, 1961.

Virgil. *Aeneid,* Vol. 2: Books 7–12. Translated by R. Fairclough and edited by G.P. Goold. Loeb Classical Library 64. Cambridge: Harvard University Press, 2001.

Valerius Maximus. *Memorable Doings and Sayings*, Vol. 1: Books 1–5. Translated by R.D. Shackleton Bailey. Loeb Classical Library 492. Cambridge: Harvard University Press, 2000.

Secondary Sources

Anderson, F.J. (ed.) 1984. Herbals through 1500. *The Illustrated Bartsch,* Vol. 90. New York: Albaris.

Armstrong, R. 2002. Crete in the Aeneid: recurring trauma and alternative fate. *The Classical Quarterly* 52: 321–340.

Baker, P.A. 2015. Images of doctors and their implements: a visual dialogue between the patient and the doctor, in G. Petridou and C. Thumiger (eds) Homo Patiens: *Approaches to the Patient in the Ancient World* (Studies in Ancient Medicine 45): 365–389. Leiden: Brill.

Baumann, H. 1986. *Die Griechische Pflanzenwelt*. Munich: Hirmer.

Baumann, H. 1996. *Greek Wildflowers and Plant Lore in Ancient Greece*. London: The Herbert Press.

Berendes, J. 1889. Pharmacie bei den alten Kulturvölkern. Die Pharmacie bei den Griechen. 1. Von den ältesten Zeiten bis Hippocrates, 460 v. Chr. *Archiv der Pharmazie* 227: 678–707.

Bowe, P. 2004. *Gardens of the Roman World*. Los Angeles: J. Paul Getty Museum.

Bowe, P. and M.D. DeHart. 2011. *Gardens and Plants of the Getty Villa*. Los Angeles: J. Paul Getty Museum.

Brown, R.A. 1982. *Pre-Greek Speech on Crete.* Amsterdam: Adolf M. Hakkert.

Chaniotis, A. 2013. Hadrian, Diktynna, the Cretan Koinon, and the roads of Crete: a new milestone from Faneromeni (Crete), in W. Eck, B. Fehér and P. Kovác

(eds) *Studia Epigraphica in Memoriam Géza Alföldy*, 59–68. Bonn: Habelt.

Chaniotis, A. 2008. What difference did Rome make? The Cretans and the Roman Empire, in G. Salmeri and B. Forsén (eds) *The Province Strikes Back: Imperial Dynamics in the Eastern Mediterranean* (Papers and Monographs of the Finnish Institute at Athens 13): 83–105. Helsinki: Finnish Institute at Athens.

Chaniotis, A. 1999. Milking the mountains: economic activities on the Cretan uplands in the Classical and Hellenistic period, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 181–220. Stuttgart: Franz Steiner Verlag.

Clark, P.A. 2016. *A Cretan Healer's Handbook in the Byzantine Tradition: Text, Translation and Commentary*. London: Routledge.

Crowther, C. 1988. A note on Minoan dikta. *Annual of the British School at Athens* 83: 37–44.

d'Andrea, J. 1982. *Ancient Herbs in the J. Paul Getty Museum Gardens*. Malibu: J. Paul Getty Museum.

De Souza, P. 1998. Late Hellenistic Crete and the Roman conquest, in W.G. Cavanagh and M. Curtis (eds) *Post-Minoan Crete: Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College London, 10–11 November 1995* (British School at Athens Studies 2): 112–116. London: British School at Athens.

Diapoulis, H.A. 1949. *Ελληνική Χλωρίς* (*Synopsis Florae Graecae*), Vol. 2. Athens: Ministry of Agriculture.

Duhoux, Y. 1982. *L'Étéocrétois: les textes – la langue*. Amsterdam: J.C. Gieben.

Evershed, R.P. 2008. Organic residue analysis in archaeology: the archaeological biomarker revolution. *Archaeometry* 50: 895–924.

Faure, P. 1987. *Parfums et aromates de l'Antiquité*. Paris: Fayard.

Felton, D. 2016. Thigh wounds in Homer and Vergil, in A. Park (ed.) *Resemblance and Reality in Greek Thought: Essays in Honor of Peter M. Smith*: 239–259. New York: Routledge.

Fitch, J.G. (trans.). 2013. *Palladius. The Work of Farming* (Opus Agriculturae*) and Poem on Grafting*. Totnes: Prospect Books.

Foley, B.P., M.C. Hansson, D.P. Kourkoumelis and T.A. Theodoulou. 2012. Aspects of ancient Greek trade re-evaluated with amphora DNA evidence. *Journal of Archaeological Science* 39: 389–398.

Foxhall, L. 1998. Cargoes of the heart's desire: the character of trade in the Archaic Mediterranean world, in N. Fisher and H. van Wees (eds) *Archaic Greece: New Approaches and New Evidence:* 295–309. London: Duckworth with the Classical Press of Wales.

Gallimore, S. 2016. *Creticum Vinum Excellens*? Reassessing the role of wine in Crete's identity, in W. Broekaert, R. Nadeau and J. Wilkins (eds) *Food, Identity and Cross-Cultural Exchanges in Classical Antiquity*: 36–50. Brussels: Éditions Latomus.

Gallimore, S. 2017. Food surplus and archaeological proxies: a case study from Roman Crete. *World Archaeology* 49: 138–150.

Glotz, G. 1953. *The Aegean Civilisation*. Paris: Albin Michel.

Gordon, C. 1975. The decipherment of Minoan and Eteocretan. *Journal of the Royal Asiatic Society of Great Britain and Ireland* 2: 148–158.

Hadjisavvas, S. and A. Chaniotis. 2012. Wine and olive oil in Crete and Cyprus: socio-economic aspects, in G. Cadogan (ed.) *Parallel lives: Ancient Island Societies in Crete and Cyprus: Papers arising from the Conference in Nicosia organised by the British School at Athens, the University of Crete and the University of Cyprus, in November-December 2006* (British School at Athens Studies 20): 157–173. London: British School at Athens.

Harrison, G.W.M. 1993. *The Romans and Crete*. Amsterdam: Adolf M. Hakkert.

Harvey, J. 1981. *Medieval Gardens*. Beaverton: Timber Press.

Hawkins, J. 2004. The ritual of therapy: Venus the healer in Virgil's *Aeneid*, in A. Barchiesi, S. Jörg Rüpke and A. Stephens (eds) *Rituals in Ink. A Conference on Religion and Literary Production in Ancient Rome held at Stanford University in February 2002* (Potsdamer altertumswissenschaftliche Beiträge 10): 77–97. Stuttgart: Franz Steiner Verlag.

Heilmeyer, M. 2007. *Ancient Herbs*. Los Angeles: J. Paul Getty Museum.

Hunt, P. 2005. *Aeneid* 12.383–440 as inspiration for ancient art: the Roman surgeon. *URL: http://traumwerk. stanford. edu/philolog/2005/11/aeneid as inspiration for anci. Html* (accessed December 5, 2019).

Hunter, R. 2009. The garland of Hippolytus. *Trends in Classics* 1: 18–35.

Jashemski, W.F., K.L. Gleason, K.J. Hartswick and A.A. Malek (eds) 2017. *Gardens of the Roman Empire*. Cambridge: Cambridge University Press.

Jashemski, W.F. 1999. *A Pompeian Herbal: Ancient and Modern Medicinal Plants*. Austin: University of Texas Press.

Kavvadas, D.S. 1956. *Εικονογραφημένον Βοτανικόν-Φυτολογικόν Λεξικόν*. Τόμος ΣΤ΄. Athens: Pelekanos Books.

Karanastasi, P. 2017. Η Άρτεμις/Δίκτυννα από το Δικτυνναίον. Ο εικονογραφικός τύπος και η πρόσληψή του κατά τους ρωμαϊκούς χρόνους, in E. Boutiras, E. Papagianni and N. Kazakidi (eds) *BONAE GRATIAE. Μελέτες Ρωμαϊκής Γλυπτικής προς τιμήν της Καθηγήτριας Θεοδοσίας Στεφανίδου-Τιβερίου*: 61–70. Thessaloniki: University Studio Press.

Krigas, N., D. Lazari, E. Maloupa and M. Stikoudi. 2015. Introducing dittany of Crete (*Origanum dictamnus L.*) to gastronomy: a new culinary concept for a traditionally used medicinal plant. *International Journal of Gastronomy and Food Science* 2: 112–118.

Kouremenos, A. 2018. In the heart of the wine-dark sea: Cretan insularity and identity in the Roman period, in A. Kouremenos (ed.) *Insularity and Identity in the Roman Mediterranean*: 41–64. Oxford: Oxbow Books.

Kypriotakis, Z. 1998. Συμβολή στη μελέτη της χασμοφυτικής χλωρίδας της Κρήτης / Contribution to the study of the chasmophytic flora of Crete. Unpublished PhD Dissertation, University of Patras.

Leadley, E. 1996. Conservation of *origanum spp*. in botanic gardens, in S. Padulosi (ed.) *Oregano: Proceedings of the IPGRI International Workshop on Oregano, 8–12 May 1996, CIHEAM* (Promoting the Conservation and Use of Underutilized and Neglected Crops 14): 24–25. Valenzano, Bari: n. p.

Liolios, C.C., K. Graikou, E. Skaltsa and I. Chinou. 2010. Dittany of Crete: a botanical and ethnopharmacological review. *Journal of Ethnopharmacology* 131: 229–241.

Manniche, L. 1999. *Sacred Luxuries: Fragrance, Aromatherapy, and Cosmetics in Ancient Egypt*. Cornell: Cornell University Press.

Mannion, A.M. and I.N. Vogiatzakis. 2007. *Island Landscape Dynamics: Examples from the Mediterranean* (Geographical Paper 183). Reading: Department of Geography, SHES, University of Reading.

Marangou, A. 1999. Wine in the Cretan economy, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 269–278. Stuttgart: Franz Steiner Verlag.

Martínez-Francés, V., D. Rivera, M. Heinrich, C. Obón and S. Ríos. 2015. An ethnopharmacological and historical analysis of 'dictamnus', a European traditional herbal medicine. *Journal of Ethnopharmacology*, 175: 390–406.

Mayyas, A.S., M.A. Al-Qudah, K.A. Douglas and F.K. Al-Ajlouny. 2012. Beeswax preserved in archaeological ceramics: function and use. *Ain Shams University. Faculty of Arts. Annals* 40: 343–371.

McGovern, P.E. and G.R. Hall. 2016. Charting a future course for organic residue analysis in archaeology. *Journal of Archaeological Method and Theory* 23: 592–622.

Mohamed, E.S. 2003. Preparation and use of perfumes and perfumed substances in ancient Egypt, in G. Tsoucaris and J. Lipkowski (eds) *Molecular and Structural Archaeology: Cosmetic and Therapeutic Chemicals* (NATO Science Series 11): 29–50. Dordrecht: Kluwer Academic Publishers.

Moody, J. 2016. The Roman climate in the southwest Aegean: was it really different?, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 59–82. Oxford: Oxbow Books.

Morris, C. and A. Peatfield. 2014. Health and healing on Cretan Bronze Age peak sanctuaries, in D. Michaelides (ed.) *Medicine and Healing in the Ancient Mediterranean*: 54–63. Oxford: Oxbow Books.

Noonan, J.D. 1997. The Iapyx episode of *Aeneid* 12 and medical tales in myth and mythography. *Phoenix* 51: 374–392.

Nosch, M.L. 2009. Approaches to Artemis in Bronze Age Greece, in T. Fischer-Hansen and B. Poulsen (eds) *From Artemis to Diana: The Goddess of Man and Beast* (Acta Hyperborea 12): 21–40. Copenhagen: Museum Tusculanum.

Oikonomakis, K. 2002. Έψημα Κρητικόν, Μια διαδρομή στην ιστορία, λαογραφία, χρήσεις και καλλιέργεια του κρητικού δίκταμου. *Περιοδική έκδοση του ΕΘΙΑΓΕ* 10(23): 11–13.

Petridou, G. and C. Thumiger (eds) 2015. *Homo Patiens — Approaches to the Patient in the Ancient World* (Studies in Ancient Medicine 45). Leiden: Brill.

Platakis, E. 1951. *Ο Δίκταμος της Κρήτης*, 1st ed. Herakleion: n. p.

Rackham, O. and J. Moody. 1996. *The Making of the Cretan Landscape*. Manchester: Manchester University Press.

Rouanet-Liesenfelt, A.-M. 1992. Les plantes médicinales de Crète a l'époque romaine. *Cretan Studies* 3: 173–190.

Salazar, C. 1999. *The Treatment of War Wounds in Graeco-Roman Antiquity* (Studies in Ancient Medicine 21). Leiden: Brill.

Sarpaki, A. 2012. The taming of an island environment: Crete from dawn to noon (Neolithic to the end of the Bronze Age), in G. Cadogan (ed.) *Parallel lives: Ancient Island Societies in Crete and Cyprus: Papers arising from the Conference in Nicosia organised by the British School at Athens, the University of Crete and the University of Cyprus, in November-December 2006* (British School at Athens Studies 20): 35–45. London: British School at Athens.

Sarpaki, A. 2001. Condiments, perfume and dye plants in Linear B, in A. Michailidou (ed.) *Manufacture and Measurement. Counting, Measuring and Recording Craft Items in Early Aegean Societies* (*Meletemata* 33): 197–265. Athens: Research Center for Greek and Roman Antiquity, National Hellenic Research Foundation.

Sideropoulos, K. 2004. Νομισματική ιστορία της ρωμαικής και πρωτοβυζαντινής Κρήτης (67 π.Χ. – 827 μ.Χ.). Testimonia et desiderata, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congress internazionale (Iraklion 23-30 settembre 2000)*, Vol. II: 193–223. Padua: Bottega d'Erasmo.

Skinner, M.B. 2007. Venus as physician. *Vergilius* 53: 87–99.

Skoula, M. and S. Kapetanopoulos. 1996. *Origanum dictamnus L.* and *O. vulgare L.subsp. Hirtum* (link) Letswaart: traditional Uses and Production in Greece, in S. Padulosi (ed.) *Oregano, Proceedings of the IPGRI International Workshop on Oregano, 8–12 May 1996, CIHEAM* (Promoting the Conservation and Use of Underutilized and Neglected Crops 14): 26–32. Valenzano, Bari: n.p.

Skrubis, B. 1979. *Origanum dictamus L.*, A Greek native plant. *Journal of Ethnopharmacology* 1: 411–415.

Sparkes, B.A. 2013. *The Red and the Black: Studies in Greek Pottery*. London: Routledge.

Sporn, K. 2013. Diktynnaion sanctuary, in R.S. Bagnall, K. Brodersen, C.B. Champion, A. Erskine and S.R. Hunter (eds) *The Encyclopedia of Ancient History*. Wiley Online Library.

Svoronos, I.N. 1890. *Numismatique de la Crète ancienne. Accompagné de l'histoire, la geographie et la mythologie de l'ile*. Macon: Impr. Protat frères.

Taborrelli, L. 1994. Spunti per una ricerca sulla produzione di medicamenta-aromata a l'attivita vetraria a Crete. *Archeologia Classica* 46: 441–451.

Totelin, L.M. 2016. Local specialties and global remedies in the Graeco-Roman world, in R.F. Kennedy (ed.) *The Routledge Handbook of Identity and the Environment in the Classical and Medieval Worlds*. London and New York: Routledge.

Turland, N.J. 1995. *Origanum dictamnus L.*, vulnerable (VU), in D. Phitos, A. Strid, S. Enogerup and W. Greuter (eds) *The Red Data Book. World Wide Fund for Nature (WWF), Athens, Greece*: 394–395. Athens: Michalas.

Twede, D. 2005. The origins of paper based packaging, in L.C. Neilson (ed.) *The Future of Marketing's Past, Proceedings of the 12th Conference on Historical Analysis and Research in Marketing*: 288–300. Long Beach: California State University.

Vlazaki, M. 2010. 'Iris cretica' and the prepalatial workshop of Chamalevri, in O. Krzyszkowska (ed.) *Cretan Offerings: Studies in Honour of Peter Warren* (British School at Athens Studies 18): 359–366. London: British School at Athens.

Vrachnakis, T. 2003. Trichomes of *origanum dictamnus L.(Labiatae)*. *Phyton* 43: 109–133.

Voudouri, D. and C. Tesseromatis. 2015. Perfumery from myth to antiquity. *International Journal of Mediterranean Pharmacy* 3: 41–55.

Warren, P. 1985. The fresco of the garlands from Knossos, in P. Darque and J.-C. Poursat (eds) *L'iconographie minoenne. Actes de la Table ronde d'Athènes (21–22 avril 1983)* (Bulletin de Correspondance Hellénique, Suppl. 11): 187–208. Athens: Ecole française d'Athènes.

Weiss, E. and M.E. Kislev. 2007. Plant remains as a tool for reconstruction of the past environment, economy, and society: archaeobotany in Israel. *Israel Journal of Earth Sciences* 56: 163–173.

Wroth, W.W. 1886. *Catalogue of the Greek Coins of Crete and the Aegean Islands*, 9. London: The Trustees of the British Museum.

11.

The Fabrics of Roman to Early Byzantine Cretan Amphorae from the Sphakia Survey

Jane Francis, Eleni Nodarou, Jennifer Moody

Introduction

The Sphakia Survey Project began in 1987 with the goal of recording and interpreting the environmental and cultural history of Sphakia, in southwest Crete, from the late-Neolithic period up to AD 1900. This interdisciplinary project integrates analyses of archaeological, historical, and environmental data across the *c.* 470km^2 of the eparchy.[1] Sphakia is a diverse and mountainous region. The White Mountains form its heart, rising 2400 meters out of the Libyan Sea. The Frangokastello Plain characterises southeast Sphakia, while the northeast includes the beautiful, well-watered, and fertile mountain plain of Askyphou. The mountains of west Sphakia are split by dramatic gorges, often running down into the sea. The Survey divided this terrain into eight geographical regions (Nixon *et al.* 1988: 163) and identified 320 sites of human activity (Moody and Nixon, pers. comm.) (**Figure 11.1**). The history of this region was divided into three broad chronological phases: Prehistoric–early Iron Age, Greek–Roman, and Byzantine–Venetian–Turkish.

Ceramic analysis has formed a major part of the research of the Sphakia Survey. Along with traditional morphological studies, the project implemented an intensive and systematic program of macroscopic fabric analysis; petrographic analysis on key fragments has helped to answer questions about clay sources, manufacturing technologies, and imitation of Cretan prototypes (Moody *et al.* 2003). The methodologies and results of the initial fabric work are supplemented by our new studies in this article.

The Roman period in Sphakia saw settlement move from higher elevations down to the coast and a general economic boom, although this occurred at different times in various parts of Sphakia (Francis 2017). In the late-Roman to early Byzantine era, large ports grew and developed at ancient Phoinix, known today as Loutro (Francis 2017; Price 2006), and at Tarrha, at the mouth of the Samaria Gorge (Buechner 1960; Perlman 2004: 1188, no. 991; Weinberg 1960).[2] Both these sites preserve multiple Roman inscriptions (e.g., *IC* II.xx.1–7; II.xxix.1–14) and are mentioned in the *Stadiasmus Magnis Mari* (328–329, 329–330).

Among the many important Roman finds from the Survey are 381 fragments of Roman vessels identified as Cretan-made amphorae, and which come from 68 different sites across Sphakia.[3] Many of these vessels fall into the *Amphore Crétoise* 1 (AC 1), a shape first associated with Crete in the 1970s by John Riley (1979: 180–183), and *Amphore Crétoise* 3 (AC 3). Both types were described by a French/Greek study of kiln sites in the 1980s (Empereur *et al.* 1991, 1992; Marangou-Lerat 1995; Markoulaki *et al.* 1989). Further research has refined this typology, identified additional manufacturing sites, expanded the chronological range of these vessels, and widened their distribution off Crete (Gallimore 2018; Portale and Romeo 2000; Tsatsaki and Nodarou 2014). These containers are believed to have held Cretan wine, the sweet *passum* that was so popular around the Roman world, but they may have also, on occasion, transported olive oil, fish sauce, honey, or other commodities. Re-use of these vessels for other merchandise, including wine, during their lifespan is likely (Foley *et al.* 2012; Gallimore 2017: 143; Peña 2007), but the evidence for wine as the primary contents of these Cretan amphorae far outweighs, at present, information about other commodities. The distribution of these vessels around the Mediterranean and beyond is considerable, and a few examples appear even as far away as Roman Britain, an example of which displayed a *titulus picti* indicating the contents to be sorb apples (Gallimore

[1] The two-volume, final publication of this project is now nearing completion (Oxford University Press). For preliminary results, see, for example, Nixon *et al.* 1988, 1989, 1990; for research based on the project, see Francis *et al.* 2000; Moody *et al.* 1998; Moody 2012; Moody *et al.* 2003; Nixon *et al.* 1994, 2009; Nixon and Price 2001; Price *et al.* 2002.

[2] Ptolemy (*Geog.* 3.15.3) mentions Tarrha but wrongly situates it to the west of Poikilasion, beside Lissos.

[3] This total count does not include six fragments of Classical/Hellenistic date whose fabrics are related to later Roman amphorae; see below. These fragments are included in Appendix A (**SSA 101–106**).

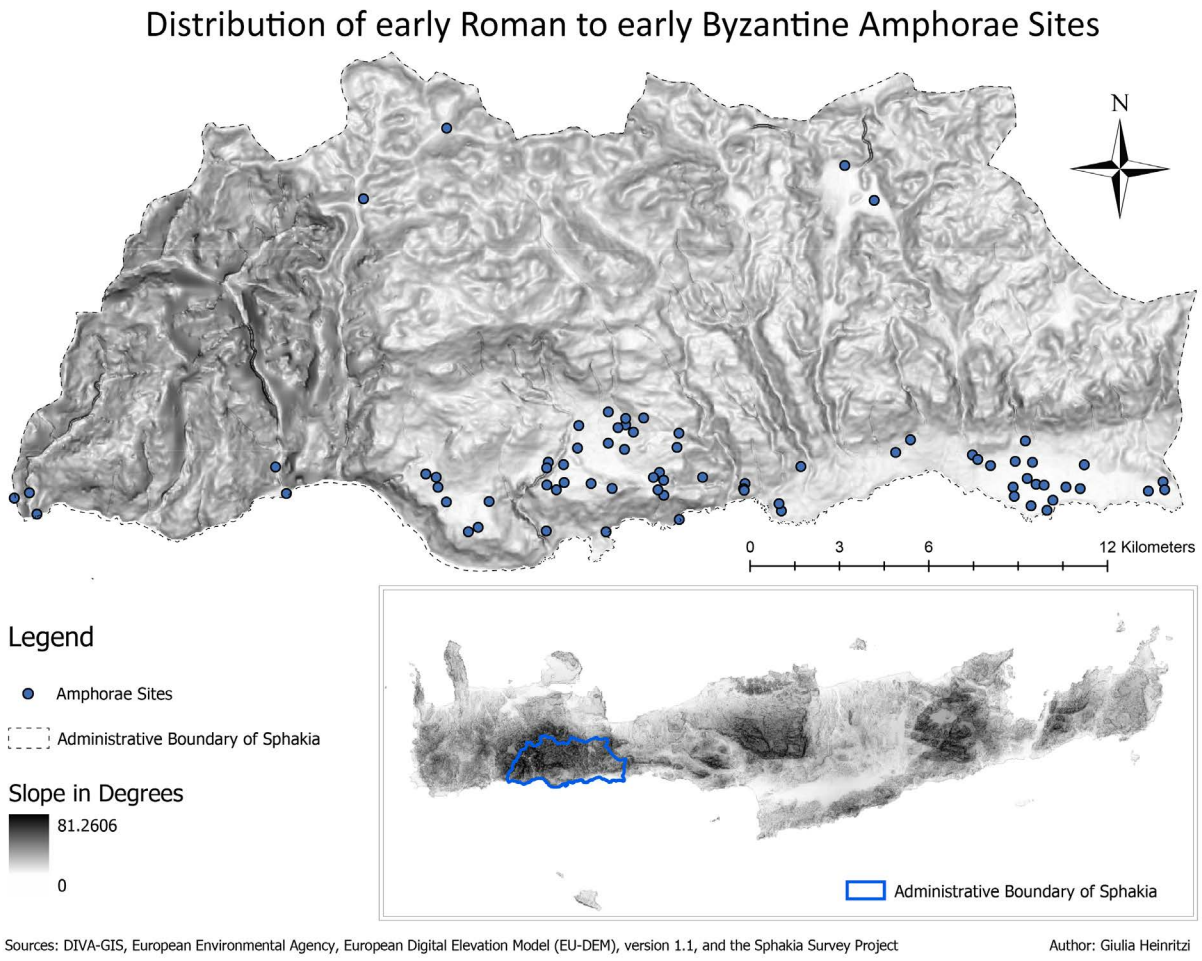


Figure 11.1. Map of Sphakia with sites mentioned in text (G. Heinritzi).

2017: 143; Williams 2003).[4] Service tree (*Sorbus*), however, is very rare on Crete today and was probably no more common in the Roman era, making it unlikely that sorb apples would have originated in Crete. Thus, the *titulus picti* was likely added later in a re-use of the original container.[5] Other amphora fragments are more ambiguous but belong to the late-Roman series of combed vessels, including fragments of the Late Roman Amphora 2 / TRC 10 form.

The manufacture of standardised Cretan amphorae seems to have begun in the late-Hellenistic period, with examples from Trypetos in east Crete dating from the late-3rd/2nd century BC (Vogeikoff-Brogan and Apostolakou 2004: 425; Vogeikoff-Brogan *et al.* 2008). Two types have been identified: AC 5 and AC 7 in the earlier typology (Marangou-Lerat 1995: 66–67), and EC 1 and EC 2 (*Ellenistico Cretese*) in the Gortyn classification (Portale and Romeo 2000: 415); Callaghan (2014: 330) dates the inception of the AC 7 type later, in the reign of Nero (AD 54–68). These vessels are now known to have been produced at ten workshop sites, evidence that is beginning to change the perception of Crete's meagre off-island trade engagement in the Hellenistic period: Loutra (Tsatsaki and Nodarou 2014), Eleutherna (Kalpaxis 1994; Tsatsaki 2010; Tsatsaki and Nodarou 2014: 228), Gortyn (Portale and Romeo 2001: 264–66), Knossos (Eiring *et al.* 2002: 59–60), Kommos (Hayes 2000: 318–19), Matala (Hope Simpson *et al.* 1995: 336), Hierapytna (Gallimore 2015: 41–42), Keratokambos West (Marangou-Lerat 1995: 67), Lato pros Kamara, and Trypetos (Vogeikoff-Brogan and Apostolakou 2004: 420–22).[6]

The end point of this production is not secure. The longstanding interpretation that Cretan amphorae

[4] For distribution maps and detailed discussion of distribution, see Gallimore 2016 and fig. 12.1. Williams (2003) discusses the amphora from Britain. An amphora fragment of Cretan shape found at Carnuntum was examined in 2014 by one of the authors (Francis) but its igneous fabric did not appear to be Cretan, suggesting that Cretan shapes were imitated off the island. The authors thank Andreas Konecny and Catherine Leisser for facilitating the study of this vessel.

[5] There are two types of *Sorbus* in Crete, one confined to the White Mountains (*sorbus aria cretica*) and one found in the mountains of central and east Crete, especially the Asterousia (*sorbus umbellata*).

[6] A good map with both the Hellenistic and Roman amphora kiln sites on Crete is published by Gallimore (2018: fig. 2).

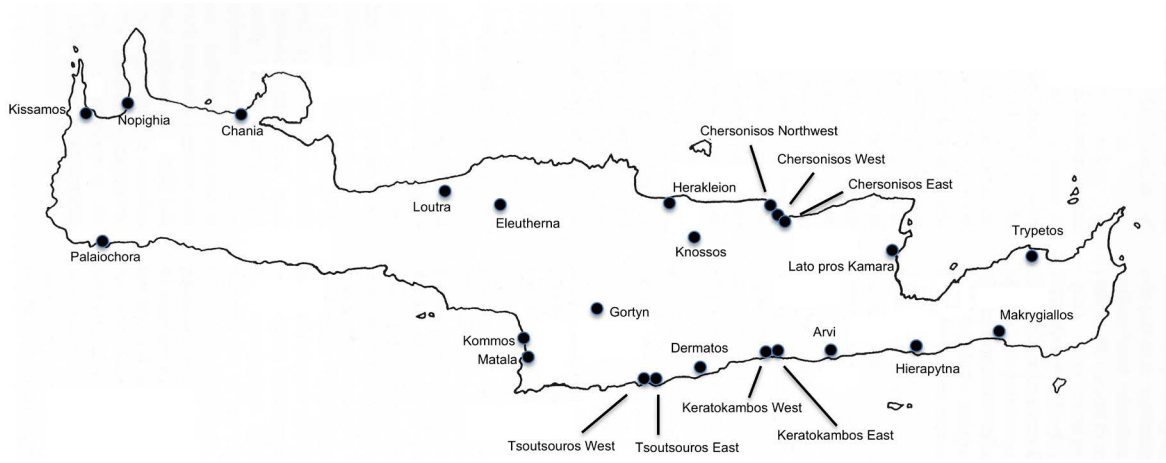


Figure 11.2. Map of known Hellenistic and Roman kiln sites in Crete (J. Francis).

ceased to be made after the early 4th century AD has been overturned by evidence from Gortyn and Eleutherna, which shows that the Cretan amphora tradition continued unbroken into the 7th century AD (Gallimore 2016; 182–184; Poulou-Papadimitriou and Nodarou 2014; Yangaki 2016: 216–221, 2005: 189, 194–197; Portale and Romeo 2000: 419–426, 2001: 260–261, 264–266, 269–279, 302–313). The later phase included the combed amphora type.

Five forms of Cretan amphorae dating to the Roman imperial period were identified by Marangou-Lerat and her colleagues and assigned to 17 production sites across the island. The re-evaluation of the typology based on amphorae from the Gortyn excavations now expands this to 18 imperial types: four early Roman, up to 250 AD (*Antico-Romano Cretese*: ARC 1–ARC 4); three mid-Roman, to the end of the 4th century AD (*Medio-Romano Cretese*: MRC 1–MRC 3); and eleven late-Roman to early Byzantine, between the 5th and 8th centuries AD (*Tardo-Romano Cretese*: TRC 1–TRC 11) (Portale and Romeo 2000).

Seventeen production centers were originally identified by the French/Greek project, but five additional centers are now known, and this number will undoubtedly increase: Kissamos (Marangou-Lerat 1995: 36–39); Nopighia (Marangou-Lerat 1995: 39); Herakleion (Marangou-Lerat 1995: 40–44); Chersonissos East (Marangou-Lerat 1995: 44–46); Chersonissos West (Marangou-Lerat 1995: 47); Chersonissos Northwest (Marangou-Lerat 1995: 47–48); Trypetos (Marangou-Lerat 1995: 48); Lagada (Marangou-Lerat 1995: 49); Makrygialos (Marangou-Lerat 1995: 49–50); Arvi (Marangou-Lerat 1995: 50); Keratokambos East (Marangou-Lerat 1995: 50–52); Keratokambos West (Marangou-Lerat 1995: 52–53); Dermatos (Marangou-Lerat 1995: 53–55); Tsoutsouros East (Marangou-Lerat 1995: 55–57); Tsoutsouros West (Marangou-Lerat 1995: 57); Matala (Marangou-Lerat 1995: 57–58); Palaiochora (Marangou-Lerat 1995: 59–60); Kommos (Hayes 2000: 318–19); Eleutherna (Yangaki 2004–2005: 509); Chania (Limantzaki 2011); and Knossos and Gortyn (Gallimore 2018: 327) (**Figure 11.2**).

Not all these kiln sites manufactured the amphora forms found in Sphakia. *Amphore Crétoise* 1, the most recognised form in Sphakia, was made at 16 kiln sites (Kissamos, Dermatos, Palaiochora, Trypetos, Lagada, Arvi, Tsoutsouros East, Tsoutsouros West, Keratokambos East, Chersonissos East, Chersonissos West, Makrygialos, Matala, Kommos, Chania, and Eleutherna), while AC 3 forms, also common in Sphakia, were made at only two (Trypetos and Dermatos). Since none of these production centers are located in Sphakia, it was important to try to identify which centers, if any, could have made the amphorae found in Sphakia, as a means of understanding the region's economy and trading networks during the Roman period. Unfortunately, there continues to be a disconnect in modern scholarship between the identification of kiln sites, the examination of the amphora fabrics and shapes within them, and studies of amphorae found in excavated contexts or on survey sites. Few studies of Roman kiln sites on Crete include precise and systematic fabric analysis, making it extremely difficult to assign vessels to a particular workshop (Gallimore 2015: 209; Yangaki 2016: 13–14). Limited petrographic fabric descriptions are available from Keratokambos (Krywonos *et al.* 1982; Riley 1979: 180–183) and Eleutherna (Joyner 2000: 230–234, nos 5 and 6) but they are hard to match up with macroscopic descriptions of Sphakiote amphorae fabrics (see below). We have, however, been able to rule out some kiln sites on the basis of local geology and macroscopic analysis of their ceramic fabrics: for example, one of the authors (Francis) analysed the amphorae from the kilns at Nopighia and Kissamos and was able to confirm that

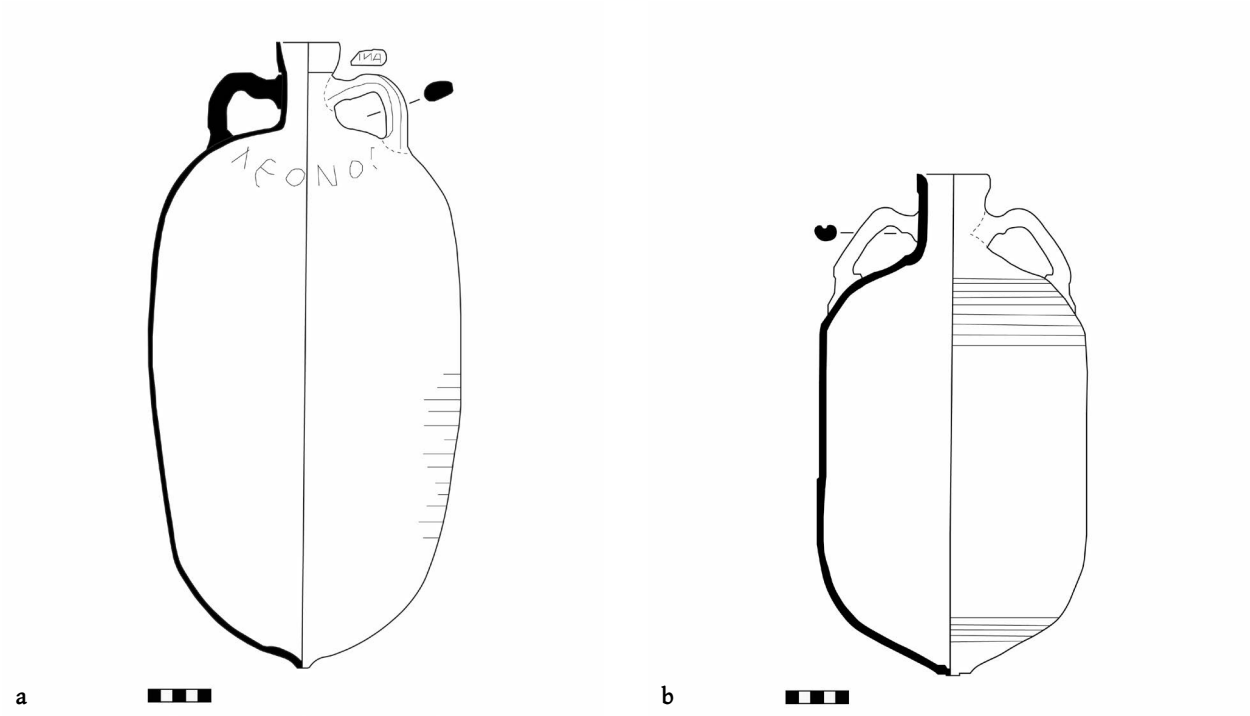


Figure 11.3a–b. a) AC1 amphora, from Chania (after Marangou-Lerat 1995: pl. III, fig. 30, A19); b) AC1 amphora, from Knossos (after Sackett 1992: pl. 189, S1,22).

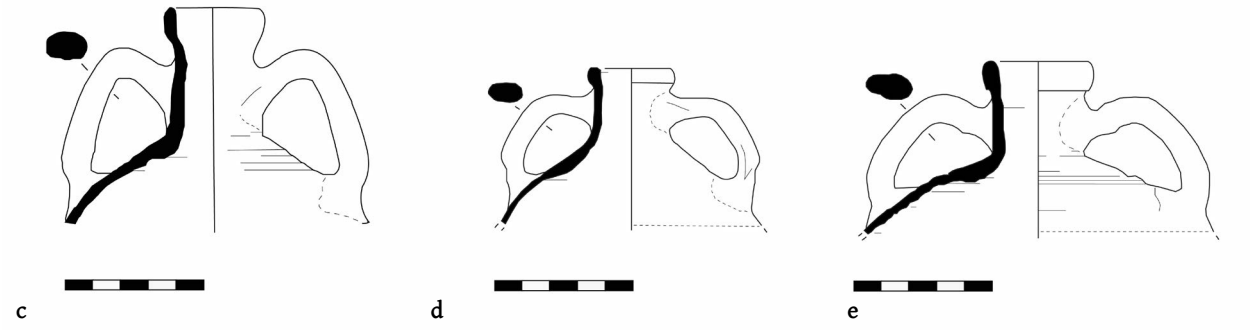


Figure 11.3c–e. c) ARC 1c amphora, from Gortyn (after Portale and Romeo 2000: 420, fig. 2, no. 18); d) MRC 2b amphora, from Gortyn (after Portale and Romeo 2000: 421, fig. 3, no. 25); e) MRC 3 amphora, from Gortyn (after Portale and Romeo 2000: 420, fig. 2, no. 21).

Figure 11.3f–g. f) MRC 1 amphora, from Gortyn (after Portale and Romeo 2000: 420, fig. 2, no. 19); g) AC 1 amphora, from Phoinix-Loutro, Sphakia Survey (A. Bowtell).

Marangou-Lerat 1995	Portale and Romeo 2000	Date
AC 1a	ARC 1a–c	early 1st to early 3rd centuries
AC 1b	ARC 1	2nd century
AC 1c	MRC 3	3rd- to 4th-century contexts
AC 1d	MRC 2	mid-2nd to mid-3rd centuries
AC 1e	None	late-3rd century (?)

Table 11.1: Concordance of AC 1 Amphora Forms.

the Sphakiote vessels were not made in these centers. Our multi-disciplinary project on Sphakiote fabrics, the preliminary results of which are presented below, provides further insights.

Cretan amphorae in Sphakia

The following discussion is based on material from the Sphakia Survey (Appendix 11.1).[7] The shapes of these vessels were analysed before the publication of the revised Italian typology from Gortyn. Although most of the Sphakiote examples could not be more closely identified than the broad types listed in Marangou-Lerat (1995), a small number could be assigned to the now-multiple types. In this article we split the material into two chronological sections: Roman (1st through 3rd/4th centuries AD), which includes the standardised early to mid-Roman shapes, as identified by Marangou-Lerat (e.g., 1995) and Portale and Romeo (2000); and late-Roman to early Byzantine, which comprises the combed amphorae. A final group includes Sphakiote amphora fragments that could not be identified by form.

Early to middle-Roman amphorae

Amphora forms

Amphore Crétoise 1 is also known as Peacock and Williams Class 41 (Peacock and Williams 1986: 177–179), Knossos Type 2 (Hayes 1983: 143, type 2, fig. 20), and Benghazi Type MR 2 (Riley 1979: 180–183, D222–227, fig. 82). The standard version of this container has a cylindrical or oval body with rounded bottom displaying a small button at center. The neck is somewhat short and round. Curved handles are attached to the neck just below the rim and reach to the upper shoulder (**Figure 11.3a–g**).

Shallow ribbing is present on the body or shoulder in some examples. The rims take the form of an upright, moulded collar, slightly thickened and elongated along their length. AC 1 amphorae were mainly produced from the 1st to the late-3rd centuries AD but have been found in contexts as late as the early 5th century (Portale and Romeo 2000: 419). *Amphore Crétoise* 1 is certainly the most common and longest-lived Cretan amphora type (Hayes 1983: 143; Marangou-Lerat 1995: 67–77). The capacity of these vessels is estimated at 20–25 liters: Gallimore (2018: 380) cites capacities of 24–25 liters, while Vogt (2000: 90) gives a broader range of 20–25 liters.

Amphores Crétoises 1 are extremely common on Crete and occur at a large number of sites; it is clear that their contents were distributed and consumed on the island as well as exported. Published examples come from the Akrotiri Peninsula (Raab 2001: 106, no. 149, 114, no. 201, 131, nos 358–359, fig. 49), Gortyn (Portale 2011: 127–128, fig. 36; Portale and Romeo 2000: 419–422, figs 2–5, 2001: 270–272, no. 10, 276–277, no. 15, 307–308, no. 67), Eleutherna (Vogt 2000: 90–92, figs 41–43; Yangaki 2005: 183–188), Knossos (Forster 2009: 156–157, 159–160, nos 259–268, fig. 4.41; Frend and Johnston 1961: 228, no. 101, fig. 19; Hayes 1983: 143, Type 2, A11–A15, fig. 20; Sackett 1992: 178, N1,49, fig. 6); Ierapetra (Gallimore 2015: 211, 214–218, nos 382–395), and Argyroupoli (Gavrilaki-Nikoloudaki 1988: 38, fig. 5). *Amphore Crétoise* 1 is the most common Roman amphora identified at Kommos (Hayes 2000: 320, no. 53, pl. 4.67). The type is the most frequent 'local amphora' in the Gournia survey area (Hayes and Kossyva 2012: 168) but is uncommon in the Galatas and Kavousi survey areas (Gallimore 2017b: 237; Haggis 2005: 58, fig. 25, site 1.15). Examples also appear at Kastelli Kissamou, Phalasarna, Nopighia-Drapania, Aptera, Kouphonisi, Makrygialos (Marangou-Lerat 1995: 68–72, A9–A79, pls I–X), Chania (Limantzaki 2011), and the cave of Eileithyeia at Tsoutsouros (Grigoropoulos 2011: 166–167).

Marangou-Lerat (1995: 67–77) divided this form into five sub-types (AC 1a–e), while the Gortyn typology splits them between ARC 1, MRC 1, MCR 2 and MRC 3 shapes, with the latter forms running into the 4th century AD (Portale and Romeo 2000: 419). **Table 11.1** presents a concordance of the two current systems for these amphora types and their dates.

Amphore Crétoise 1 fragments are relatively common in Sphakia, with 90 identified fragments, mostly rims and handles (**Figure 11.4**); unaffiliated body sherds are not included in this number, as they cannot be assigned to a specific shape with confidence. In addition, the publication of the revised Gortyn typology appeared after the Sphakiote amphorae had been studied, so only those that were drawn or photographed have been reclassified (**Appendix 11.1**); the remainder are identified broadly as AC 1 vessels.

The second type of Roman Cretan amphora identified in Sphakia is the *Amphore Crétoise* 3, also referred to as Knossos Type 1 (Hayes 1983: 140–143; Marangou-Lerat 1995: 82–84; Portale and Romeo 2000: 419). This amphora has a slightly smaller capacity than AC 1 vessels and displays flattened, more angled handles, a demarcated join of neck and shoulder, and a pronounced, moulded rim often with a flat top surface (**Figure 11.5a-b**). The neck is sometimes lightly ridged, and the vessel can be surprisingly thin walled. These amphorae were produced from the early 1st to the end 2nd/early 3rd

[7] The catalogue numbers for the fragments listed in the Concordance (Appendix A) are bolded throughout this text. The abbreviation 'SSA' refers to 'Sphakia Survey Amphora,' the numbering series of the fragments addressed in this article.

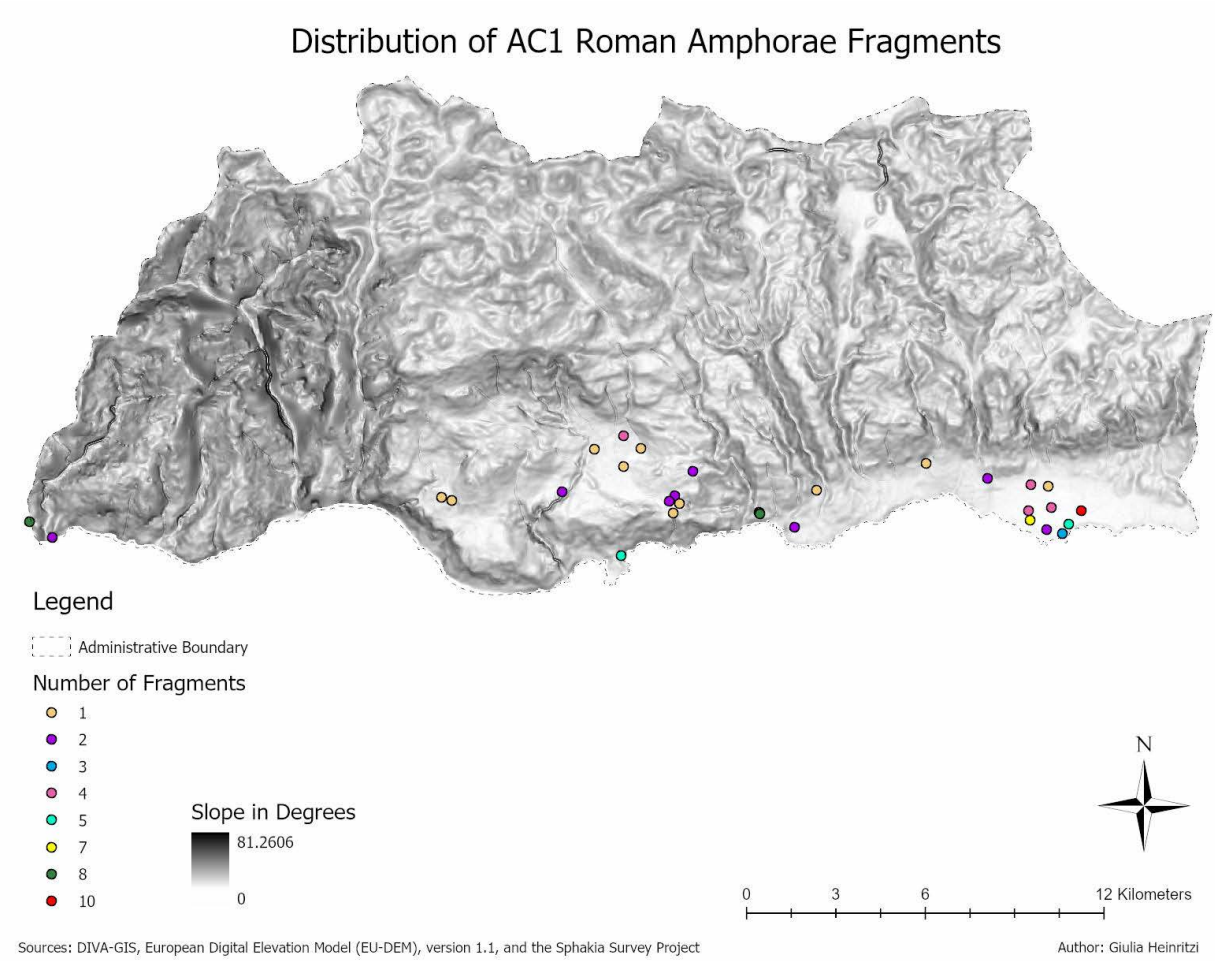


Figure 11.4. Distribution of AC 1 amphorae in Sphakia (G. Heinritzi).

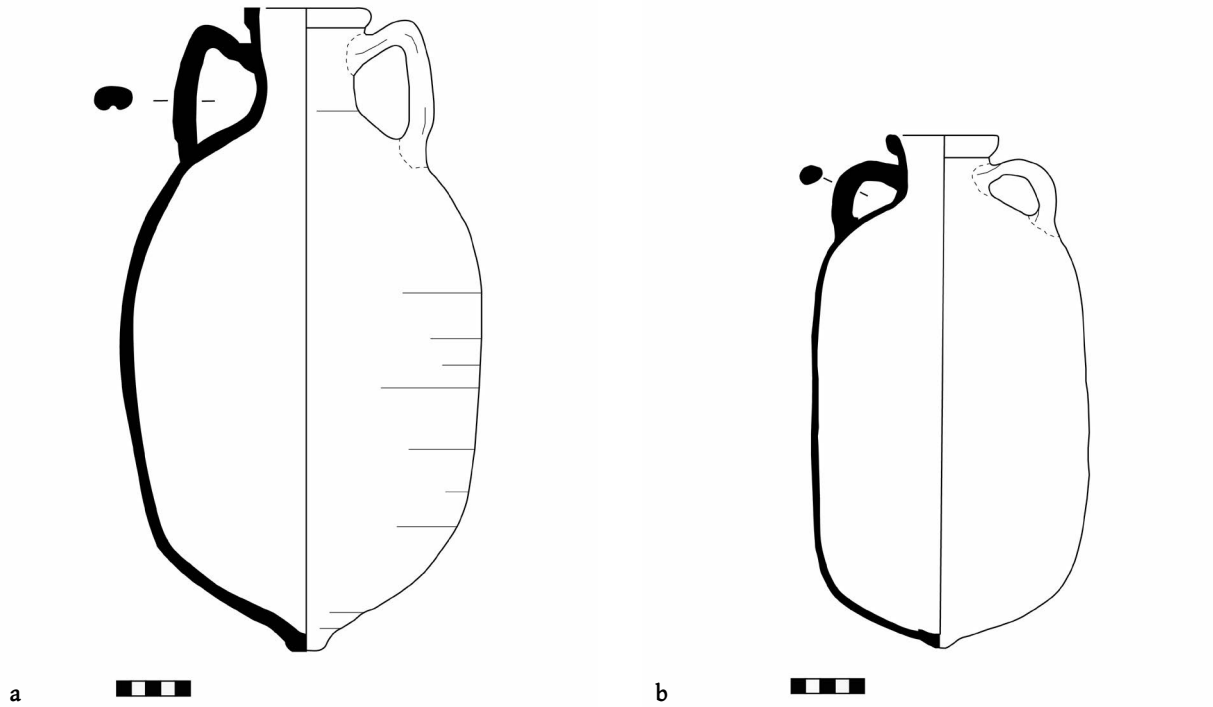


Figure 11.5a–b. a) AC 3 amphora, from Pompeii (after Marangou-Lerat 1995: pl. XVIII, fig. 68b); b) AC 3, composite (after Marangou-Lerat 1995: pl. XVII, fig. 64).

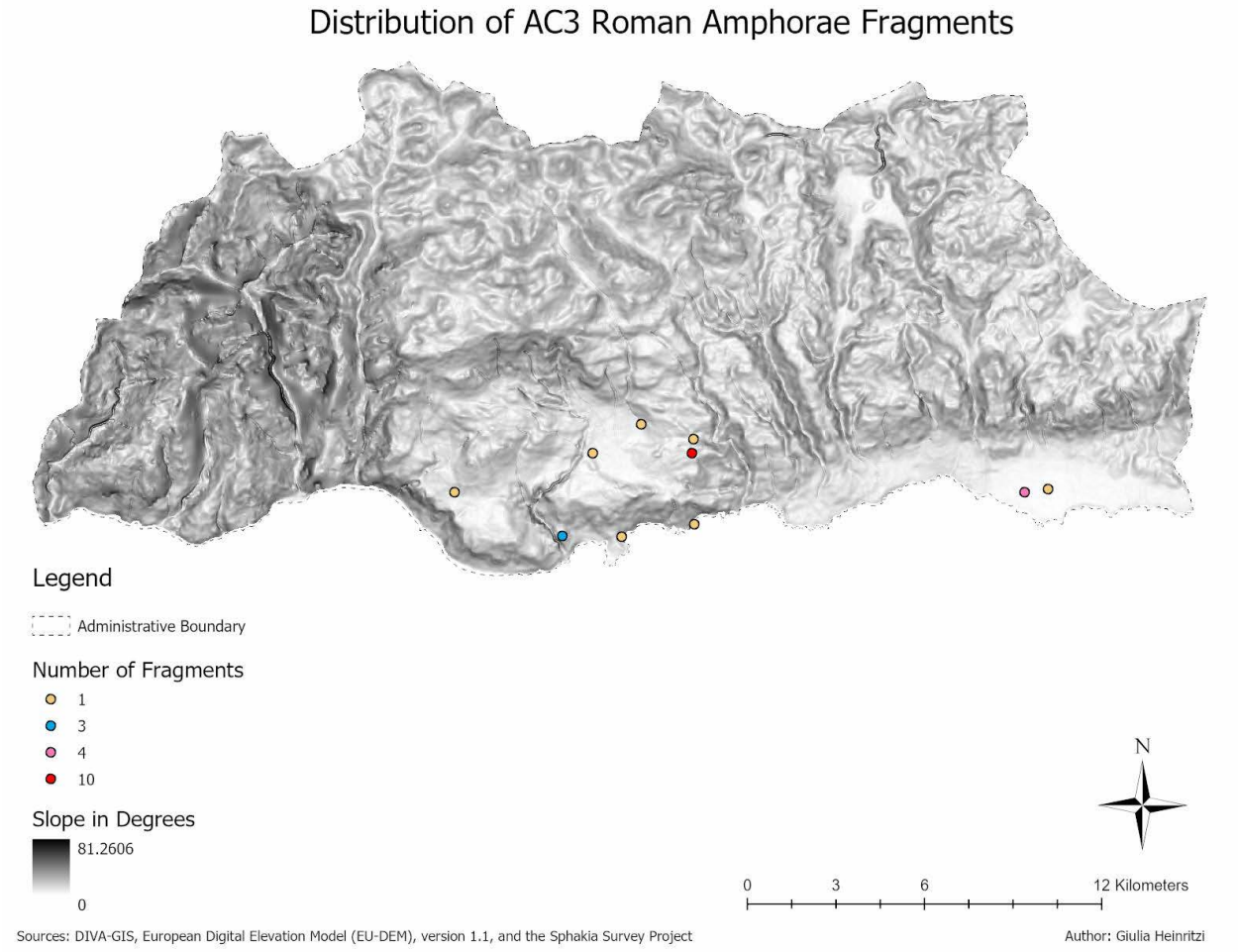


Figure 11.6. Map: distribution of AC 3 amphorae in Sphakia (G. Heinritzi).

century AD. In the Gortyn typology, AC 3 amphorae are termed ARC 3 (Portale and Romeo 2000: 419).

Amphore Crétoise 3 fragments have a restricted distribution on Crete, but the form is well represented off the island (Marangou-Lerat 1995: 84). It is known in east Crete at Ierapetra (Gallimore 2011: 334, no. 413, fig. 5.35), and Agios Nikolaos (Marangou-Lerat 1995: 83). In central Crete, examples are cited at Knossos (Hayes 1971: 269, no. 52, pl. 39b, 1983: 141–143, Type 1, fig. 20; Sackett 1992: 190, A2,102–104), Herakleion (Empereur *et al.* 1991: 492, fig. 9; Marangou-Lerat 1995: 83), Kommos (Hayes 2000: 319, no. 46), Kaloi Limenes (Marangou-Lerat 1995: 82), Gortyn (Portale 2011: 129; Portale and Romeo 2000: 419, 2001: 274–275, no. 12), and Tsoutsouros (Grigoropoulos 2011: 166). In west Crete, AC 3 vessels have been identified at Chania (Raab 2001: 72, no. 101, fig. 17, 72, no. 103, fig. 17), and from the sea at Loutro prior to the work of the Survey (Marangou-Lerat 1995: 82).

In Sphakia, only 24 fragments of AC 3/ARC 3 amphorae were identified (**Figure 11.6**), far fewer than the 90 AC 1 types. *Amphore Crétoise* 3 shapes have not yet been divided into sub-forms, and only a few of the Sphakia examples find direct, published parallels (**Table 11.2**).

SSA No.	Parallels (Marangou-Lerat 1995)
28	Fig. 54 A108
33	Fig. 67 A113–A115
32	Fig. 66 A109–A110
29	Fig. 67 A116
27	Fig. 67 A113–A115

Table 11.2: AC 3 Forms identified in Sphakia.

Macroscopic Fabric Analysis (MACFA)

Fourteen fragments (15%) of AC 1 amphorae were analysed macroscopically. Many fabrics were too fine to identify any inclusions other than 'sand' (**SSA 6, 20, 21, 24, 25**). We were, however, able to distinguish one consistent fabric that we call 'Cretan Sand' (**SSA 7, 17, 23**). 'Cretan Sand' has a sand-based paste with abundant, small to tiny, calcareous grits, occasional silver mica, and/or a fine mixture of metamorphic grits. They are usually fired to a pale colour, which ranges from buff to

buff-tan to pink. One example of an AC 1 sherd made of 'Cretan Sand' (**SSA 7**) was included in the analytical program (presented in detail below) and belongs to Group A. Since the beneficial properties of adding calcareous material to wine to control acidity and ageing was well known in antiquity (Columella 12.20.8), it may be that the frequent use of calcareous fabrics for amphorae intended to hold wine was intentional.

Three other AC 1 fabrics were isolated macroscopically: one with abundant calcitic pseudomorphs (**SSA 13**), a quartz-rich, metamorphic clay (**SSA 11**), and one with milky quartz and red ferrous in a metamorphic sand paste (**SSA 16**). This last fragment was included in the analytical fabric program and belongs to Group B.

Three fragments (12.5%) of AC 3 amphorae were analysed macroscopically and each sherd was a different fabric. One is a mixed sand paste (**SSA 29**) and belongs to our analytical fabric Group A. Another is an iron-rich paste with large amounts of sandstone and milky quartz (**SSA 31**) and belongs to our analytical fabric Group B. A third sample contains some gold mica (**SSA 33**) and was not part of the analytical fabric program.

As noted previously, linking any of the above-defined fabrics to known Cretan amphora production centers is problematic because there are so few petrographic or macroscopic descriptions of fabrics from kiln sites. Keratokambos and Eleutherna,[8] both of which produced AC 1 but not AC 3 forms, are exceptions. Keratokambos fabrics are characterised by chert and limestone with no mica (Krywonos *et al.* 1982). Eleutherna fabrics are characterised by abundant mica and a peculiar mix of metamorphic grits (Joyner 2000: 230–234, nos 5 and 6). Neither of the above fabrics corresponds to Sphakiote ones.

Distribution and use in Sphakia[9]

Amphore Crétoise 1 and AC 3 amphora have distinctive distributions in Sphakia. *Amphore Crétoise* 1 vessels were widespread: 90 fragments scattered at 31 sites across coastal, lowland, and middle Sphakia (**Figures 11.4**, **11.6**; **Table 11.3**). Upland Sphakia, which includes the Madhares (the high mountain pastures of the White Mountains) and the Askyphou plain, preserved no AC 1 fragments. This suggests that AC 1 amphorae arrived in Sphakia by boat through harbours like Phoinix-Loutro (5.11), or smaller ports and/or anchorages like Ag. Nikolaos (Trypiti) (1.01) in the far west at the mouth of the Trypiti Gorge, Khora Sphakion: Tholos (6.19) in central Sphakia, or Ag. Nikitas (8.50) in the east on the Frangokastello plain. Curiously, AC 1 amphorae are scarce at these sites, preserving only five, two, two, and three fragments respectively. Instead, most AC 1 sites are small, one- or two+ -house habitations located in east Sphakia (36 fragments from nine sites: 8.07, 8.17, 8.35, 8.37, 8.39, 8.40, 8.44, 8.52, 8.56) and central Sphakia (25 fragments from 11 sites: 4.17, 4.27, 4.34, 4.40, 4.41, 4.42, 4.46, 4.66, 6.06, 6.19, 6.25). All of these sites are in the hinterlands of the ports and typically preserve one to four fragments. The only exceptions are the single-house site Bungalows NE (8.56) and the two+ house site Ag. Pelagia Structure (8.40), with 10 and seven fragments respectively. Both of these collections, however, could represent single vessels as all the sherds were grouped together and are likely to have been made of the same fabric; one example from the latter site belongs to analytical fabric Group B (**SSA 18**).

Larger settlements (10 and >20 houses) also have AC 1 amphorae but the number of fragments is proportionally little more than that found at small sites — 14 fragments from five sites: 3.03, 4.28, 5.11, 8.38, 8.50 — indicating that site size was not an important factor in the final use (or re-use) of these amphorae.

We also note a strong association between AC 1 amphorae and beekeeping equipment. Two sites with a lot of beekeeping vessels also preserve relatively high numbers of AC 1 amphorae: Beehive Area (1.07) had eight AC 1 fragments and 17 beekeeping, and Ag. Triadha (6.06) had eight AC 1 fragments and 22 beekeeping. Sixteen other sites scattered across Sphakia also preserved AC 1 amphorae and ceramic beekeeping equipment, albeit in smaller proportions: 3.03, 3.05, 4.17, 4.27, 4.34, 4.40, 4.41, 5.11, 6.19, 6.25, 8.07, 8.17, 8.38, 8.39, 8.44, 8.50. Although it is hard to prove that these two types of vessels were entirely contemporary (beehives are notoriously difficult to date with precision), this association occurs at 63% of all sites in Sphakia with AC 1 amphora, which is a high proportion and likely to be meaningful.

The distribution of AC 3 amphorae in Sphakia is similar to AC 1 vessels but not identical. Twenty-seven fragments of AC 3 amphorae were found at 10 sites (**Figure 11.4**; **Table 11.3**). Like AC 1, no AC 3 fragments were found in upland Sphakia, but unlike AC 1, the vast majority of AC 3 amphorae come from central Sphakia (19 out of 24, 79%); No AC 3 sherds were found in west Sphakia and only five fragments were found in the east, suggesting that most AC 3 vessels arrived through the ports and small anchorages of central Sphakia; in fact, the only port with AC 3 amphorae is Phoinix-Loutro (5.11, 1 fragment) in central Sphakia.

[8] Although no kiln has been found at Eleutherna itself, the unique character of the Eleutherna fabric indicates a source in the northern part of the Mylopotamos Mountains and has been used to argue for the existence of an unknown kiln site there (Vogt 2000: 90).

[9] Unbolded numbers in brackets following site names represent the Sphakia Survey site numbers; see **Table 11.3**.

Again, like AC 1, the majority of AC 3 sherds come from small one- or two+ -house habitations; however, they were represented by only one fragment. The exception is Kastri (4.66), a one-house site on the Anopolis Plain, with 10 AC 3 fragments. This is, however, likely to be a single vessel, as the sherds are grouped together and described macroscopically as the same fabric; one sherd studied in depth belongs to analytical fabric Group A (**SSA 29**).

Six out of the 10 known AC 3 sites include beekeeping equipment (60%, 4.37, 4.67, 5.01, 5.11, 8.38, 8.39), a significant association and percentage that is again similar to AC 1.

Only four sites preserved both AC 1 and AC 3 amphorae fragments: two sites in central Sphakia — the large harbour town Phoinix-Loutro (5.11: 5 and 1 fragments, respectively) and a single-house site on the Anopolis plain above the harbour, Kastri (4.66: 2 and 10 fragments, respectively); and two sites in east Sphakia both on the Frangokastello Plain — the large settlement Hood B7 (Ag. Astratigos) (8.38: 4 and 4 fragments, respectively), and a single-house site Sheepshed (8.39: 4 and 4 fragments, respectively).

The foregoing discussion presents a dilemma: although AC1 and AC 3 amphorae must have entered Sphakia via its ports and anchorages, mainly in central and eastern Sphakia, most examples come from small sites in the hinterland. What drove the movement of these vessels out of their ports of entry and into the hinterland? Does this distribution result from a desire for the original contents of the pots, or from a desire for the pots themselves?

Although it may not explain every findspot, the strong association between AC 1 and AC 3 amphora fragments and sites with beekeeping equipment suggests that re-use of the vessels, rather than a desire for their contents, could account for as much as 60% of the depositional pattern. For example, it seems probable that at sites with beekeeping and AC 1 and/or AC 3 vessels at least some amphorae were re-used to bring water to bees or to store honey after harvesting hives on site, perhaps for future export (Francis 2016: 96). A Cretan amphora found at Pompeii has a *dipinti* interpreted as referring to the contents as thyme-flavored honey (*CIL* 4.5741; Peña 2007: 103–104). Some amphorae may even have been re-used as beehives. Transport amphorae and beehives are similar in size and construction and have similar requirements: hives, like amphorae, are moved around a lot, so both vessel types need to be durable enough to withstand considerable and frequent movement, but light and small enough to be portable (Francis 2016: 7). The importance of pot re-use and recycling when considering the final resting places of these amphorae should not be underestimated (Abdelhamid 2016; Peña 2007).

Late-Roman to early Byzantine combed amphorae in Sphakia

This section examines the amphorae from Sphakia dating from the 4th through the 7th centuries AD and thus spanning the late-Roman into early Byzantine periods. One hundred and ninety-three fragments were identified as belonging to these vessel types; this number does not include a large amount of undefined body sherds, so the net count may well be higher.

Amphora forms

Sixty-six of the Sphakiote combed fragments are tentatively identified as LRA 2 amphora types, also known as Peacock and Williams Class 43 (1983: 182–184), Benghazi LR 2 (Riley 1979: 217–219), and Keay Type LXV (Keay 1984: 352–357; Yangaki 2005: 201–203). This is the only shape that can be securely identified among this assemblage because the overwhelming majority of fragments are body sherds that cannot be associated with specific shapes. This is also the case for the combed fragments from excavations at Ierapetra (Gallimore 2015: 228).

Late Roman 2 amphorae were manufactured at a variety of centers, with workshops identified in the Aegean, Greece, and the Black Sea region (Gallimore 2015: 228; Peacock and Williams 1986: 182; Vogt 2000: 83). A more precise workshop can sometimes be identified based on shape, such as Kounoupi in the Argolid (Zimmerman Munn 1985: 342–343). Crete can now be added to this list: the TRC 10 amphora, made in recognisably local clays at least at Gortyn, is an imitation of this international type (Portale and Romeo 2000: 422–426). The LRA 2 is a globular vessel with dense, horizontal combing on the upper body/shoulder area; this can be horizontal or wavy. The relatively short neck splays outwards to the shoulder, and the rim has a rounded top and concave interior surface. Handles are short, oval in section, and attached to the upper shoulder and lower neck (**Figure 11.7a–b**).

These amphorae flourished between the 4th and early 7th centuries, approximately a century after the cessation of the AC types classified by Marangou-Lerat and discussed above. The later dating of MRC 2 and MRC 3 amphorae to the 3rd century, however, narrows the gap between these two amphora series. *Tardo-Romano Cretese* 1 starts in the late-4th century (Portale and Romeo 2000: 419–422).

Late Roman Amphora 2 amphorae are said to have contained oil, which, if also the case for Crete, sets them apart from the earlier AC, ARC, and MRC vessels

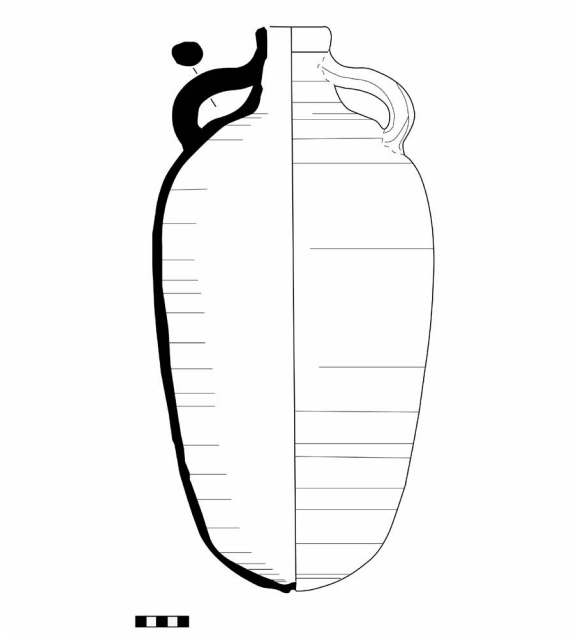


Figure 11.7a. LR 2 amphora, from Gortyn (after Portale and Romeo 2001: pl. LVd).

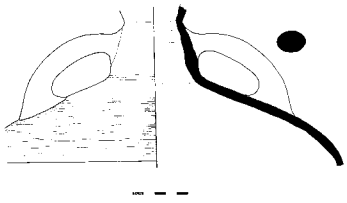


Figure 11.7b. LR 2 amphora, from Wells, Sphakia Survey (A. Bowtell).

whose manufacture was probably tied to Crete's wine export industry (Karagiorgiou 2001: 147; Vogt 2000: 83–84). Little is known about olive oil production in Roman Crete, although the ongoing identification of olive presses, mostly through survey projects as at Gournia (Vogeikoff-Brogan 2012: 87), suggests that a re-assessment of this enterprise is warranted (Gallimore 2017a: 143–144).

Macroscopic fabric analysis (MACFA)

Macroscopic fabric analysis was performed on forty-three fragments of Sphakiote combed amphorae, a group that includes LRA 2 fragments. Interestingly, many of our combed amphorae fabrics are macroscopically very similar to 'Cretan Sand', the common AC 1 fabric described above: 'Orange Calc Sand' (**SSA 35, 53**) '"Cretan" Buff-Tan Fine Calc Sand' (**SSA 43, 49, 50, 51, 71**), 'Tan with Calc' (**SSA 40, 77, 78**), '"Cretan" Buff-Tan Sand' with dark ferrous (**SSA 52, 56**) and with mixed metamorphic grits (**SSA 50**). Four of these sherds were included in the analytical fabric program and all belong to Group A (**SSA 35, 51, 52, 53**), as did some AC 1 and AC 3 shapes. This suggests that the same production source was used to make amphorae for hundreds of years.

Other combed amphorae sherds are made of very fine clays fired orange (**SSA 45, 55, 56, 60, 74, 76**) and buff-tan (**SSA 38, 48, 59, 66**). Some contain visible sand but nothing distinctive (**SSA 36, 37, 58, 62, 63, 65, 67**).

One fabric has a mixed metamorphic paste with dark ferrous grits (**SSA 54**); another is characterised by fine quartz, silver mica, and soft-red inclusions (probably siltstone/sandstone), a fabric we call 'QMSR' (**SSA 64**).

Three sherds contain a lot of silver mica (**SSA 42, 70, 47**); another has enough gold mica to suggest an off-Crete source (**SSA 61**). Other fabrics have dominant calcitic pseudomorphs (**SSA 44, 73, 75, 79**), glassy quartz (**SSA 46**), and soft red (probably siltstone) inclusions (**SSA 72, 69**). An oddity is a semi-lustrous fabric with metamorphic inclusions (**SSA 57**).

Distribution and use in Sphakia

One hundred and ninety-three combed amphora fragments, including the LRA 2 vessels, have been identified from 49 sites in Sphakia, but not all of these fragments are believed to be Cretan (**Figure 11.8**; **Table 11.3**).

Their distribution in Sphakia differs significantly from that of the AC 1 and AC 3 vessels. They are more abundant and more widespread across the eparchy than the earlier amphorae, and now appear in greater numbers in the west (12 sherds) and upland Sphakia: the Madhares (2 sherds); the Askyphou Plain (2 sherds). Although the numbers in the uplands are low, compared to the complete absence of the earlier amphora types, this distribution may be significant. The increases seen in west Sphakia — a dozen fragments identified at four sites — are also noted across the eparchy: 107 fragments at 28 sites in central Sphakia, and 75 fragments at 17 sites in the east. The overall greater numbers of examples as well as their wider distribution shows an increased circulation of Cretan amphorae but may also indicate shifts in production and circulation of various goods, especially if the earlier AC amphorae were used predominately for wine and the later combed vessels for oil.

One-house sites have the lowest concentrations of combed amphora fragments — one to four sherds; exceptions are Ag. Ioannis Vokolos S (8.44: nine fragments) and Whispering Pines (4.59: 13 fragments). Sites with two or more houses preserve one to 13 sherds; larger assemblages are at Kombitsi (4.30: seven fragments), Limnia 2 (4.41: 13 fragments), and Lime-Kiln (8.36: 14 fragments). Ten to 20 or more house sites had consistently slightly larger numbers — around three to four fragments each, while Tarrha (1.28) and Hood B6 (8.23) both have seven, Phoinix–Loutro (5.11) has 21, and Hood B7 (Ag. Astratigos) (8.38) contains 20.

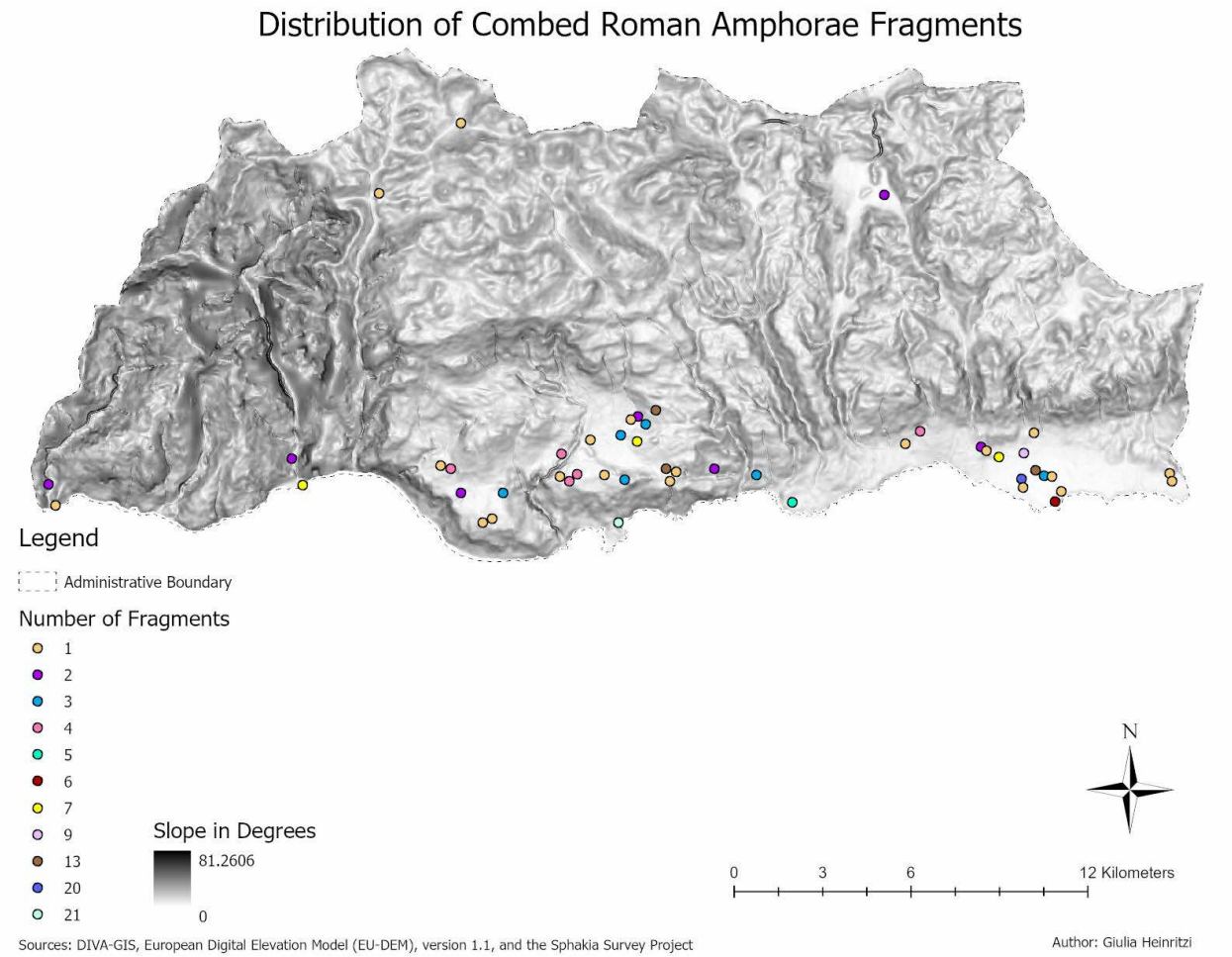


Figure 11.8. Distribution of combed amphorae in Sphakia (G. Heinritzi).

Although larger sites tend to have greater numbers of fragments, this is not a consistent pattern, and several large estate centers, like Gourounokephalo 3 (3.12) and Assokephalo (4.03), both in central Sphakia, had only one and four fragments, respectively. Nevertheless, unlike AC 1 and possibly AC 3 amphorae, larger concentrations of combed amphorae tend to be found at larger sites.

The important harbour site of Phoinix-Loutro has the largest collection of combed amphora fragments in Sphakia (21 sherds), contrasting with the few AC 1 (5 sherds) and AC 3 (1 sherd) fragments found there. It may be that the vessels were awaiting transhipment through the site's harbour rather than redistribution inland, marking a significant change from the earlier period. Two other anchorages or ports had moderate numbers of combed amphorae: Tarrha (1.28: seven fragments) and Ag. Nikitas (8.50: six fragments).

Once again, a strong correlation exists between ceramic beekeeping equipment and amphorae: 32 of the 49 sites (65%) contain both shapes. The utility of large, closed vessels for carrying water to apiaries or decanting or storing honey during harvest can be emphasised once again. Some of these amphorae may also have contained honey for export (Francis 2016: 96).

Only three sites preserve all three types of amphorae — AC 1, AC 3, combed — demonstrating a continuity of use of Cretan transport containers throughout the Roman period. One is the major harbour site in central Sphakia, Phoinix-Loutro (5.11), where such an array is not unexpected. The other two sites are in east Sphakia on the Frangokastello Plain: the large settlement Hood B7 (Ag. Astratigos) (8.38) and the single-house site Sheepshed (8.39).

Cretan amphorae of unknown form

Not all Roman amphorae fragments deemed to be Cretan products could be associated with specific forms nor did they display combed surfaces. Nevertheless, the fabric, possible origins, and findspots of these amphorae enhance the patterns revealed by those with known shapes. This group contains 70 fragments, 27 of which were examined macroscopically (**Table 11.3**); five received petrographic analysis. All studied

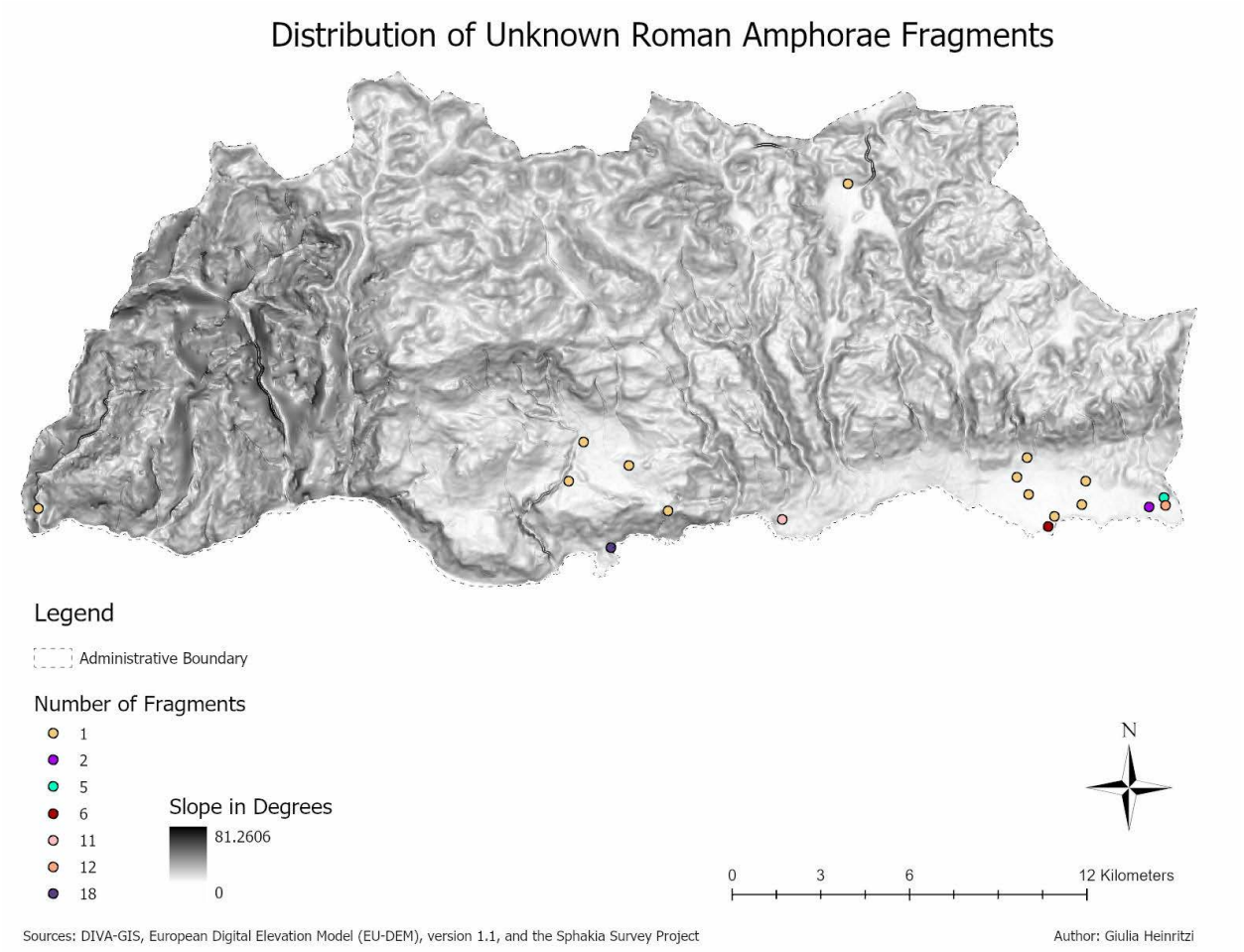


Figure 11.9. Distribution of Cretan amphorae of unknown form in Sphakia (G. Heinritzi).

examples were made of fine to medium clays fired to buff-tan, orange, and/or pink colours. One amphora (**SSA 94**) has a fine, calcareous, sand paste and is probably related to the 'Cretan Sand' fabric discussed for AC 1, AC 3 and combed amphora above.[10] Another (**SSA 84**) is similar to the fabric of an AC 3 amphora (**SSA 31**), which has been assigned to analytical fabric Group B. Four other Cretan amphorae of unknown form have also been assigned to analytical fabric Group B (**SSA 80, 81, 83, 85**), but have no corresponding MACFA data. An oddity is an amphora (**SSA 97**) made of a clay with sponge spicules, which do not naturally occur in Sphakiote clays; a nearby source is Apokoronas, to the north (Moody *et al.* 2003: 97–100).[11] Another oddity is a micaceous fabric (**SSA 100**), which is unusual for Crete, but not unknown. Micaceous clays have been identified from the amphora kiln at Kissamos (Markoulaki *et al.* 1989: 556; Raab 2001: 67), but the origin of this vessel — Cretan or not — is ambiguous.

The largest fabric group observed in amphorae of unknown form is 'QMSR' (**SSA 86, 88, 92, 95, 96**), characterised by fine quartz, mica, and soft-red inclusions; this combination of inclusions was previously discussed in the section on combed amphorae. This fabric appears in buff-tan, orange, and pink pastes with a sandy core, and all but one (**SSA 95**) have powdery surfaces. These amphorae were all found at the same site Khora Sphakion: Tholos (6.19) and may derive from the same clay source. None of these sherds were included in the analytical fabric program.

Of particular significance is a group of six amphora fragments of unknown shape that belong to pre-Roman vessels (Classical/Hellenistic) or amphorae of uncertain date (Classical through Roman), with MACFA and petrographic data. One sherd (**SSA 103**) is made of 'Cretan Sand' and, like other 'Cretan Sand' examples that were analysed, falls into analytical fabric Group A. Three early sherds were made of different MACFA fabrics: Fine Pink (**SSA 101**); Fine Orange Silver Glitter Calc (**SSA 102**); and Fine Orange Calc Sand (**SSA 106**); all were assigned to analytical fabric Group B. Two other sherds (**SSA 104, 105**) were made in similar

[10] This vessel was published as an example of 'Cretan' Tan Fine Calc Sand fabric (Moody *et al.* 2003: 84–85).

[11] Sponge spicules also occur in some of the amphorae from the kiln at Loutra (Fabric 1), east of Rethymnon; see Tsatsaki and Nodarou 2014: 300–301.

MACFA fabrics, Fine Orange to Orange-Pink Sand, but were not assigned to an analytical fabric Group. The discrepancies between MACFA and analytical fabric groups may be attributed to the difficulty of doing MACFA on very fine ceramic fabrics. Nevertheless, these fabric classifications testify to the long-term use of the same clay sources, from possibly as early as the Classical period through Roman and into the early Byzantine period.

The amphorae of unknown form come from 26 sites, few of which preserve more than a single fragment (**Figure 11.9**); exceptions are Phoinix-Loutro (5.11: 17 frags), Khora Sphakion: Tholos (6.19: 11 frags); and four sites in east Sphakia: Ag. Nikitas (8.50: 6 frags), Katalimata (8.75: 2 frags), Cliff Shelter (8.80: 5 frags), and Lakkos Enclosure (8.81: 12 frags).

With a few exceptions, the amphorae of unknown form occur as individual fragments at their sites (**Table 11.3**). Of the 20 sites identified with these vessels, they are the only type of amphora found at seven (4.04, 4.44, 7.19, 7.24, 8.57, 8.58, 8.75). Assemblages of two or more fragments come from only six sites: 5.11, 6.19, 8.50, 8.75, 8.80, 8.81. These vessels most frequently coincide with combed amphorae (1.06, 4.15, 4.30, 5.11, 8.36, 8.43, 8.44, 8.50, 8.52, 8.80, 8.81), which may suggest a late-Roman date for many of them. Fewer are found at sites that preserve the earlier AC 1 (4.34, 5.11, 6.19, 8.44, 8.50, 8.52) and AC 3 (4.15, 5.11) amphorae. The largest collections come from Phoinix-Loutro (5.11: 20 fragments), Khora Sphakion: Tholos (6.19: 11 fragments), Ag. Nikitas (8.50: 6 fragments), Cliff Shelter (8.80: 5 fragments), and Lakkos Enclosure (8.81: 12 fragments). They are most prevalent at sites in central (36 fragments) and east (33 fragments) Sphakia; only one fragment has been identified in the west.

There is, again, a very strong association between sites with beekeeping equipment and those with Cretan amphorae of unknown form — 14 of the 18 sites (78%) — giving further support to the importance of re-use and recycling in amphorae discard patterns.

Site No.	Site Name	Site Type	AC 1	AC 3	Comb.	Unkn.	Total
1.01	Ag. Nikólaos (Trypití)	Harbour, anchorage	2		1		3
1.06	Poikilásion Peradhoro	2+ houses, beehives			2	1	3
1.07	Beehive Area	Beekeeping centre	8				8
1.19	Near Old Ag. Roumeli	>20 houses, beehive			2		2
1.28	Tárrha	>20 houses, beehive			7		7
2.13	Klisidhia 3	Field house/seasonal			1		1
2.30	Livádha 3	Field house/seasonal			1		1
3.02	Perianá	1 house			2		2
3.03	Panagía	10+ houses, beehives	1		4		5
3.05	Bardhastérna 1	Watchtower, beehive	1		1		2
3.07	Révma	1 house		1			1
3.10	Gourounoképhalo 1	1 house, beehives			1		1
3.12	Gourounoképhalo 3	Estate center, beehive			1		1
3.14	Prophitis Ilias	2+ houses, beehive			3		3
3.20	Arádhena	>20 houses, beehives			4		4
3.21	Rock-cut Area	Unknown	2				2
4.01	Ts'Ási	1 house, beehives			4		4
4.02	Pátrou Kepháli	2+ houses			1		1
4.03	Assoképhalo	Estate center, beehive			4		4
4.04	Miloniés	1 house				1	1
4.06	Ridge W	1 house			1		1
4.15	Vikolídha	2+ houses		1	1	1	3
4.17	Terraces	1 house, beehives	1				1
4.21	Ancient Anópolis	>20 houses, beehives			3		3
4.27	Prínaka 1	2+ houses, beehives	1		2		2
4.28	Limniá 2	10+ houses	1		3		4
4.30	Kombítsi	2+ houses, beehives			7	1	8
4.32	Limniá 4	1 house			1		1

Table 11.3: Sphakia Survey Sites with Roman and Early Byzantine Cretan Amphorae.

Site No.	Site Name	Site Type	AC 1	AC 3	Comb.	Unkn.	Total
4.34	Cistern House	1 house, beehives	4			1	5
4.37	Prínaka 3	1 house, beehives		1			1
4.40	Kambiá 1	1 house, beehives	2				2
4.41	Kambiá 2	2+ houses, beehives	2		13		15
4.42	Kambiá 3	2+ houses	1		1		2
4.44	Troúlos	Unknown				1	1
4.46	Kambiá Koulé W	1 house	1		1		2
4.58	Limniá Basin W	2+ houses, beehive			3		3
4.59	Whispering Pines	1 house, beehives			13		13
4.63	Xerovóthonas	Beehive site			2		2
4.66	Kastrí	1 house	2	10			12
4.67	Makryvóthonas	2+ houses, beehive		1			1
4. Offsite	None	None	1				1
5.01	Livanianá Akrópolis	>20 houses, beehive		3			3
5.11	Phoínix-Loutró	>20 houses, beehives	5	1	21	20	47
5.19	Tímios Stavrós E	1 house		1			1
6.04	Ag. Triádha 1	1 house, beehives			3		3
6.05	Ag. Triádha 2	Unknown	1				1
6.06	Ag. Triádha	2+ houses, beekeeping	8				8
6.13	Khóra Sphakíon 1	1 house			5		5
6.19	Khora Sphakion: Thólos	1 house, beehives	2			11	13
6.25	Ergastíria	1 house; beekeeping	1				1
7.19	Skógios 3	None				1	1
7.24	Askyphou: Karés	Unknown				1	1
7.25	Askyphou: Mésa Goní	1 house			2		2
8.05A	Ta Livádhia	1 house, beehives			1		1
8.07	Nomikianá S	1 house, beehives	1		4		5
8.17	Hood B4	2+ houses, beehives	2		2		4
8.22	Hood B5	1 house			1		1
8.23	Hood B6	10+ houses			7		7
8.35	Vitex	1 house	2				2
8.36	Lime-Kiln	2+ houses, beehives			14	1	15
8.37	Khálasma	2+ houses	1				1
8.38	Hood B7 (Ag. Astrátigos)	>20 houses, beehives	4	4	20		28
8.39	Sheepshed	1 house, beehives	4	4	3		11
8.40	Ag. Pelagía Structure	2+ houses	7		1		8
8.43	Patsianós 1	Settlement, beehives			1	1	2
8.44	Ag. Ioánnis Vókolos S	1 house, beehives	4		9	1	14
8.50	Ag. Nikítas	>20 houses, beehives	3		6	6	15
8.52	Bungalows W	1 house	5		1	1	7
8.54	Wells	1 house, beehives			1		1
8.56	Bungalows NE	1 house	10				10
8.57	Koúlis Lákkoi	1 house				1	1
8.58	Rockpile	1 house, beehives				1	1
8.75	Katalímata	1 house, beehives				2	2
8.80	Cliff Shelter	1 house, beehives			1	5	6
8.81	Lákkos Enclosure	1 house, beehives			1	12	13
Total			90	27	194	70	381

Table 11.3 *cont.*: Sphakia Survey Sites with Roman and Early Byzantine Cretan Amphorae.

Analytical approach to Cretan amphorae

Many categories of Greco-Roman ceramics collected by the Sphakia Survey were sampled for archaeometric analysis within the confines of a multi-disciplinary project.[12] The aim was to study ceramic fabrics and technology(ies) of pottery manufacture, and potentially identify Cretan productions and imitations of foreign prototypes against off-island imports. An array of amphorae was included in the analysis so that all forms and macroscopic fabric classes would be represented. All samples were analysed by thin section petrography and some of these were selected for further analysis with X-Ray Diffraction (XRD) and Scanning Electron Microscopy (SEM). The fineness of the fabrics and the absence of comparative archaeological material from the area made this approach necessary.

The majority of the Sphakiote amphorae considered to be of Cretan origin fell into two petrographic fabrics that are compositionally and texturally connected to each other. The first (Group A) is characterised by a brown to dark brown firing matrix and the non-plastic inclusions include primarily micritic limestone, quartz, biotite, and occasionally some chert (**SSA 4–7, 29, 41, 42, 51–53,** and possibly **SSA 35**; also the earlier Classical/Hellenistic **SSA 103**). The second (Group B) is also characterised by a dark firing matrix but the non-plastics comprise considerably larger amounts of quartz along with some decomposed miritic calcite (**SSA 2, 3, 8–10, 12, 14–16, 18, 19, 26, 28, 31, 32, 34, 39, 74, 80, 81, 83, 85**; also the earlier **SSA 101, 102, 106**). In terms of their technological characteristics, XRD and SEM analysis showed that Group A is lower fired than Group B, with firing temperatures around 850 °C for the former and 950–1000 °C for the latter. The connection between shapes and fabrics is also of interest since the samples of late-Roman/early Byzantine combed amphorae are equally split between the two groups. The situation is more complex for the Roman amphorae: Group A comprises primarily (but not exclusively) AC 1 type amphorae; Group B is more varied, including AC 1 and AC 3 type amphorae as well as amphorae slightly earlier in date (late-Hellenistic/early Roman) that had also been identified typologically as Cretan.

The preliminary results of our analytical approach to Sphakiote Cretan amphorae can be summarised as follows:

Although the mineralogical composition is not diagnostic of origin due to the fineness of the clay pastes, the homogeneity of the amphora fabrics in both petrographic groups favours Cretan manufacture. The fact that they do not match any other petrographically identified fabrics, indicates that they were probably made at a presently unknown manufacturing center — possibly one somewhere in southwest Crete (see next section on pottery production in Sphakia).

Although it is not possible to definitively identify workshops based on our present data, several observations can be made. The two fabric recipes (Groups A and B) are compositionally and texturally very similar, suggesting that the raw material sources used for both fabrics were geographically very close to one another. The small differences in composition, such as the presence of frequent quartz fragments and higher firing temperatures in Group B, could be indicative of two different workshops using similar raw materials but somewhat different processing and manufacturing techniques. There is little correlation between these amphorae fabrics and date: the late-Roman/early Byzantine combed amphorae are manufactured in both fabrics, as are the Roman AC 1 and AC 3 amphorae. AC 1 shapes have a slight tendency for the Group A recipe. The Group B recipe seems more widespread, incorporating a larger variety of amphorae (AC 1, AC 3, Cretan unknown form, and combed) and covering a broader date range, stretching from Classical/Hellenistic to the early Byzantine. Furthermore, all later forms of AC 1 (MCR 1, 2 and 3) are only made in Group B fabric, suggesting that this center may have produced pottery more or less continuously for over 1000 years.

In addition to the two main fabric groups, there are a number of petrographic loners (i.e., samples that are not incorporated in any of the groups) some of them clearly reflecting off-island imports. Among them is an AC 3 fragment (**SSA 27**), identified petrographically as a Phocean import (Group D), testifiying to the production of Cretan amphora shapes off the island and their circulation to Mediterranean markets, a situation that also explains a petrographic loner of a so-called Cretan amphora from Carnuntum (above, n. 4). The popularity of Cretan *passum* wine, or other commodities transported in these containers, must have led non-Cretan workshops to produce the distinctive Cretan shapes much in the way that Koan amphoras, for example, were replicated at multiple Mediterranean centres (e.g., Lawall and van Alfen 2011). One wonders how many other Cretan shapes on the island were made elsewhere? The value of systematic fabric analysis and publication should not be underestimated in this regard.

[12] A multi-disciplinary analytical project on ceramic material collected by the Sphakia Survey is being carried out in collaboration with I. Iliopoulos and A-M. Pollatou (University of Patras). We are grateful to the Ephorate of Chania and the Greek Ministry of Culture and Sports for sampling permits.

Evidence for pottery production in Roman Sphakia

No conclusive evidence was identified by the Survey for Roman (or Greek) pottery production in Sphakia. No kiln remains were found and only minimal finds from three sites hint at ceramic production; the negligible nature of this evidence must be emphasised.

The site of Livaniana Akropolis (5.01), in west-central Sphakia, contains a small fragment that may be a firing stilt, and shape comparisons suggest a late-Roman date. This object, however, does not show any traces of burning and thus of use in a kiln.[13] Its fabric, a mixed-metamorphic sand, is different from the greasy-feeling, phyllite-based local clay, though not incompatible with clay sources in the Frangokastello Plain used during the Bronze Age (Moody *et al.* 2003). We thus conclude that this stilt was not manufactured locally and cannot be used to argue for pottery production at the site. A comparable stilt from Hierapytna is not recorded as burned and, as at Livaniana, 'there was no associated kiln debris or wasters' (Gallimore 2015: 257, no. 519).

In east Sphakia, at the site of Ag. Nikitas (8:50) on the Frangokastello Plain, two wasters were identified as pieces of ceramic beekeeping equipment. Although both fragments were vitrified, macroscopic analysis showed that one contained quartz, while the other was a coarse sand fabric, also with quartz.[14] No other wasters were found at this site nor were any remains of a kiln seen.

The third site with a suggestion of ceramic production is Lakkos Enclosure (8.81), at the far, east end of Sphakia. Here were found three tile wasters and several shapeless clumps of burnt earth.[15] Subsequent investigations of the area revealed a nearby, good quality, Pleistocene-era clay that could have been used, but this clay has not yet been analysed; again, however, the existence of a kiln cannot be confirmed. Although the second largest collection of Cretan amphorae of unknown form (12 fragments) comes from this site, none of these sherds were included in the analytical fabric program and only three have MACFA data.

The limited nature of the Sphakiote evidence when compared to a known amphora workshop was sharply drawn in 2017 when Francis and Moody visited Marangou-Lerat's kiln site AT17 east of Palaiochora, near the southwest coast (Marangou-Lerat 1995: 58–60). The olive grove to the south of the modern road was littered with hundreds of amphora fragments, including one waster. A similar profile of amphora fragments on the ground has been observed at the two Tsoutsouros production centres (Marangou-Lerat 1995: 55–57, site AT14 and site AT15). No site in Sphakia resembles these production sites, which preserve abundant examples of the amphorae that must have been made in their kilns as well as ceramic wasters; Cretan amphorae are not present in large enough numbers anywhere in Sphakia to suggest local manufacture (see **Table 11.3**). The production centre posited on the basis of the homogenous fabrics used over several centuries thus may lie just outside Sphakia, perhaps to the east of the Frangokastello Plain, near the area of the Pleistocene clay source and just beyond Lakkos Enclosure (8.81) where tile wasters and burnt earth were found. Hopefully, further research focused on the question of Greco-Roman ceramic production in this part of Crete will reveal more precise information.

Conclusions

Our macroscopic and analytical fabric studies show that the same fabrics were used to make AC 1, AC 3 and combed amphorae, from the early Roman through the late-Roman to early Byzantine period. A small number of earlier, Classical/Hellenistic amphorae were also made in the same fabrics, indicating that the same clays and ceramic traditions were used for over 1000 years. The extraordinarily long use of these clay sources, in spite of changes in amphorae shapes and capacities, and important changes in markets for transport vessels — is remarkable.

At present, the ceramic fabrics we have identified are unique and unconnected with known workshops, demonstrating the existence of one or more heretofore-unknown production sites. The lack of evidence for Roman kilns in Sphakia combined with the consistency and longevity of the fabrics identified in this study, hint that the unknown production center(s), or at least the clay source(s), may be nearby — perhaps somewhere along the southwest coast.

Such results highlight the need for new research into viable clay sources and pottery production centres for Roman Crete. Exploration for and analysis of additional clay sources, especially in southwest Crete, might be able to pinpoint the origins of the fabrics we have identified. While a combined analytical study (e.g., macroscopic, petrographic, chemical) of amphorae from well-established kiln sites would streamline the attribution (or not) of amphorae found in settlements with known production centers.

Our distribution studies show that the final resting places of most AC 1 and AC 3 vessels were small, inland habitations at low and middle elevations, often associated with beekeeping. AC 1 vessels occur in fairly equal numbers in the Anopolis area in central Sphakia

[13] For a comparable stilt from Crete, see Gallimore 2015: 257, 260, no. 519, fig. 8.2; for mainland Greece, Papadopoulos 1992: 208–209). The Livaniana fragment was catalogued as 5.01:G01.

[14] The Sphakia Survey catalogue numbers for these wasters are 8.50:GBH-147 and 8.50:GBH-148, respectively.

[15] Catalogue numbers 8.81:UncatG24, 8.81:UncatG29, 8.81:UncatG03.

and on the Frangokastello Plain to the east. AC 3 vessels were mostly found in central Sphakia. It is therefore probable that both amphorae types arrived mainly through the large harbour at Phoinix-Loutro (5.11) in central Sphakia and, in the case of AC 1 vessels, the many small anchorages scattered along the Sphakiote coast from the mouth of the Trypiti Gorge in the west, to Ag. Marina in the east. It must be emphasised, however, that very few examples were actually found at port sites, indicating that once they landed, they were either shipped back out or distributed inland.

The maritime delivery of AC 1 and AC 3 vessels to Sphakia is indirectly supported by the coastal position of most known amphora kiln sites. Although these amphorae may also have come into Sphakia via land routes from sites outside the eparchy, there is no evidence.

Late-Roman combed amphorae have a significantly different distribution pattern to the earlier AC 1 and AC 3 vessels. They are much more abundant and found throughout Sphakia from the coast to the high mountains. Although they too entered Sphakia through its harbours and ports along the south coast, especially Phoinix-Loutro (5.11), there is also reasonable evidence that they came into the eparchy via overland trade routes from the north. Furthermore, these amphorae are more frequent at larger, rather than smaller, habitations and a much higher proportion remained at their ports of entry, rather than were re-distributed inland.

Nevertheless, late-Roman combed amphorae, like AC 1 and AC 3 vessels, are frequently found at sites that also contain ceramic beehives. This strong association, which lasted for nearly 1000 years, reveals the importance of amphora recycling and re-use in ancient apiculture.

This research demonstrates the value of combined approaches to ceramic analysis and we hope will inspire future projects.

Acknowledgements

The material presented in this article was collected in the 1980s and 1990s by the Sphakia Survey (SS), a project directed by Jennifer Moody and Lucia Nixon. A preliminary version of this paper was presented at the 11th Cretological Congress in Rethymnon, in 2011. The Survey has benefitted from the collaboration of many experts, colleagues, and friends over several decades, to whom we are all indebted: Maria Andreadaki-Vlasaki, Pamela Armstrong, Phil Betancourt, Tom Brogan, Gerald Cadogan, Anna Lucia D'Agata, Birgitta Hallager, George W. M. Harrison, John Hayes, Alan Johnston, Athanasia Kanta, Katerina Kopaka, Mark Macklin, Stavroula Markoulaki, Margaret Mook, Jerolyn Morrison, Vanna Niniou-Kindeli, Lucia Nixon, Krzysztof Nowicki, George Postma, Natalia Poulou-Papadimitriou, Simon Price†, Oliver Rackham†, Harriet Robinson, Anaya Sarpaki, Joe Shaw, Maria Shaw, Yannis Tzedhakis, Peter Warren, Vance Watrous, Tomasz Wazny. Financial support has come from Baylor University, Concordia University, INSTAP, HRCC, NSF, and the MacArthur Foundation. Drawings are by Matthew Buell and Anne Bowtell; maps are by Giulia Heinritzi and Jane Francis.

Appendix 11.1: Concordance of Sherd Numbers

This table contains all Roman Cretan amphorae collected by the Sphakia Survey for which fabric data was collected, either macroscopic or petrographic. These two series represent the numbers assigned to the amphorae fragments for this study (Sphakia Survey Amphora = SSA No.) and the catalogue numbers originally assigned to them during the study of the Sphakia Survey pottery (Sphakia Survey Cat. No. = SS Cat. No.) Amphora forms have been provided for ease of integration with the text. This chart also includes examples of Classical/Hellenistic amphorae for which there is petrographic information; these are mentioned in the text but have not been included in Table 11.3, which contains only amphora fragments dated to the Roman era.

SSA No.	SS Cat. No.	Amphora Comment
1	1.07:UncatG05	ARC 1a
2	4.42:UncatG11	ARC 1a
3	8.38:UncatG37	ARC 1a
4	5.11:UncatG298	ARC 1b
5	6.06:UncatG51	ARC 1b
6	4.27:UncatG28	ARC 1c
7	6.19:UncatG24	ARC 1c
8	8.39:UncatG28	ARC 1c
9	1.01:UncatG08	ARC 1
10	4.34:UncatG15	ARC 1
11	8.38:UncatG36B	ARC 1
12	8.39:UncatG31	ARC 1
13	8.52:UncatG15	ARC 1
14	4.46:UncatG11	MRC 1
15	6.06:UncatG48	MRC 2b
16	6.25:GBE-49B	MRC 2b
17	5.11:G06	MRC 2b
18	8.40:UncatG12	MRC 2b
19	18/25 Offsite	MRC 3
20	5.11:UncatG485	AC 1
21	6.05:UncatG02	AC 1
22	6.06:UncatG47	AC 1
23	6.19:UncatG23	AC 1
24	8.07:UncatG09	AC 1
25	8.52:UncatG10	AC 1
26	4.67:UncatG16	ARC 3
27	3.07:UncatG14	MRC 3
28	4.37:UncatG13	MRC 3
29	4.66:G02	MRC 3
30	5.01:UncatG100	MRC 3
31	5.11:UncatG484	MRC 3
32	5.19:UncatG24	MRC 3

SSA No.	SS Cat. No.	Amphora Comment
33	8.38:G05	MRC 3
34	8.39:UncatG30	MRC 3
35	1.19:UncatG48	LR 2
36	2.13:G06	LR 2
37	3.14:UncatG23	LR 2
38	3.14:UncatG24	LR 2
39	4.59:UncatG13	LR 2
40	8.22:UncatG04	LR 2
41	8.36:UncatG06	LR 2
42	8.38:G06	LR 2
43	8.38:UncatG17	LR 2
44	8.39:UncatG19	LR 2
45	8.39:UncatG20	LR 2
46	8.52:G01	LR 2
47	8.54:G02	LR 2
48	1.01:UncatG07	Combed
49	1.19:UncatG49	Combed
50	1.28:UncatG42	Combed
51	1.28:UncatG43	Combed
52	1.28:UncatG44	Combed
53	1.28:UncatG44A	Combed
54	1.28:UncatG56	Combed
55	1.28:UncatG56A	Combed
56	1.28:UncatG56B	Combed
57	2.30:G03	Combed
58	3.12:UncatG06	Combed
59	3.14:UncatG30	Combed
60	7.25:UncatG61	Combed
61	8.05A:G12	Combed
62	8.36:UncatG09	Combed
63	8.36:UncatG09A	Combed
64	8.36:UncatG09B	Combed
65	8.36:UncatG09C	Combed
66	8.36:UncatG09D	Combed
67	8.36:UncatG24	Combed
68	8.36:UncatG28	Combed
69	8.38:UncatG18	Combed
70	8.38:UncatG23	Combed
71	8.38:UncatG43	Combed
72	8.38:UncatG43A	Combed
73	8.38:UncatG43B	Combed
74	8.39:UncatG22	Combed
75	8.40:UncatG09	Combed
76	8.50:UncatG065	Combed
77	8.50:UncatG114	Combed
78	8.50:UncatG137	Combed
79	8.81:UncatG06	Combed
80	4.04:UncatG06	Unknown
81	4.15:UncatG11	Unknown
82	5.11:UncatG170	Unknown
83	5.11:UncatG296	Unknown
84	5.11:UncatG368	Unknown
85	5.11:UncatG434	Unknown
86	6.19:UncatG25A	Unknown
87	6.19:UncatG25B	Unknown
88	6.19:UncatG25C	Unknown
89	6.19:UncatG25D	Unknown
90	6.19:UncatG25E	Unknown
91	6.19:UncatG45A	Unknown
92	6.19:UncatG45B	Unknown
93	6.19:UncatG45C	Unknown
94	6.19:UncatG45D	Unknown
95	6.19:UncatG45E	Unknown
96	6.19:UncatG45F	Unknown
97	7.24:UncatG14	Unknown
98	8.52:UncatG11	Unknown
99	8.81:UncatG11	Unknown
100	7.19:G02	Unknown
101	4.29:G01	Unknown: Late Class–Roman
102	1.19:G04	Unknown: Class/Hell
103	6.25:GM-66	Unknown: Class/Hell
104	5.01:G05	Unknown: Class/Hell
105	8.61:GA-482	Unknown: Class/Hell
106	1.28:UncatG38	Unknown: Hell–Roman

Bibliography

Primary Sources

Anonymous. *Stadiasmus Maris Magni. Geographi Graeci Minores*. Edited by K. Müller. Cambridge: Cambridge University Press, 2010.

Columella. *On Agriculture*, Vol. 3: Books 10–12. Translated by E.S. Forster and E.H. Heffner. Loeb Classical Library 437. Cambridge: Harvard University Press, 1955.

Ptolemy. *Geography of Claudius Ptolemy.* Translated and edited by E.K. Stevenson. New York: New York Public Library, 1932.

Secondary Sources

Abdelhamid, S. 2016. Against the throw-away-mentality: the reuse of amphoras in ancient maritime transport, in H.P. Hahn and H. Weiss (eds) *Mobility, Meaning and the Transformations of Things*: 91–106. Oxford: Oxbow Books.

Aloupi, E., V. Kilikoglou and P.M. Day. 2000. Provenance and technological characterisation of fine tableware, in P.G. Themelis (ed.) *Πρωτοβυζαντινή Ελεύθερνα, τομέας Ι*, Vol. 2: 209–222. Rethymnon: University of Crete.

Buechner, T.S. 1960. The glass from Tarrha. *Hesperia* 29: 109–117.

Callaghan, P.J. 2014. Roman Kommos: a reappraisal. *Annual of the British School at Athens* 198: 317–333.

Eiring, J., M.-C. Boileau and I. Whitbread. 2002. Local and imported transport amphorae from a Hellenistic kiln site at Knossos. The results of petrographic analyses, in F. Blondé, P. Ballet and J.-F. Salles (eds) *Céramiques hellénistiques et romaines: productions et diffusion en Méditerranée orientale (Chypre, Egypte et* côte syro-palestinienne) (Travaux de la Maison de l'Orient 35): 59–65. Lyon: Maison de l'Orient Méditerranéen-Jean Pouilloux.

Empereur, J.-Y., C. Kritzas and A. Marangou. 1991. À la recherche des ateliers d'amphores en Crète centrale. *Bulletin de Correspondance Hellénique* 115: 481–523.

Empereur, J.-Y., A. Marangou and N. Papadakis. 1992. Recherches sur les amphoras crétoises III. *Bulletin de Correspondance Hellénique* 116: 633–648.

Foley, B.P., M.C. Hansson, D.P. Kourkoumelis and T.A. Theodoulou. 2012. Aspects of ancient Greek trade re-evaluated with amphora DNA evidence. *Journal of Archaeological Science* 39: 389–398.

Forster, G. 2009. Roman Knossos: the pottery in context. A presentation of the ceramic evidence provided by the Knossos 2000 Project (1993–1995). Unpublished PhD dissertation, University of Birmingham.

Francis, J.E. 2016. Apiculture in Roman Crete, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 83–100. Oxford: Oxbow Books.

Francis, J. 2017. Roman influence on Greek Sphakia, in D.W. Rupp and J.E. Tomlinson (eds) *From Maple to Olive. Proceedings of a Colloquium to Celebrate the 40th Anniversary of the Canadian Institute in Greece. Athens, 10–11 June 2016* (Publications of the Canadian Institute in Greece 10): 505–533. Athens: Canadian Institute in Greece.

Francis, J., S. Price, J. Moody and L. Nixon. 2000. Agiasmatsi: a Greek cave sanctuary in Sphakia, SW Crete. *Annual of the British School at Athens* 95: 427–471.

Frend, W.H.C. and D.E. Johnston. 1962. The Byzantine basilica church at Knossos. *Annual of the British School at Athens* 57: 186–238.

Gallimore, S. 2011. An Island Economy: Ierapetra and Crete in the Roman Empire. Unpublished PhD dissertation, State University of New York at Buffalo.

Gallimore, S. 2015. *An Island Economy. Hellenistic and Roman Pottery from Hierapytna, Crete* (Lang Classical Studies 18). New York: Peter Lang.

Gallimore, S. 2016. Crete's economic transformation in the late Roman Empire, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives:* 175–188. Oxford: Oxbow Books.

Gallimore, S. 2017a. Food surplus and archaeological proxies: a case study from Roman Crete. *World Archaeology* 49: 138–50.

Gallimore, S. 2017b. Early to late Roman pottery, in L.V. Watrous, D.M. Buell, E. Kokinou, P. Soupios, A. Sarris, S. Beckmann, G. Rethemiotakis, L.A. Turner, S. Gallimore and M.D. Hammond (eds) *The Galatas Survey. Socio-Economic and Political Development of a Contested Territory in Central Crete during the Neolithic to Ottoman Periods* (Prehistory Monographs 55): 235–240. Philadelphia: INSTAP Academic Press.

Gallimore, S. 2018. The relationship between agricultural production and amphora manufacture on Roman Crete. *Journal of Roman Archaeology* 31: 373–386.

Gavrilaki-Nikoloudaki, I. 1988. Κεραμεική του 3ου αι. μ.Χ. απο την Αργυρούπολη Ρεθύμνης. *Κριτική Εστία* 2: 30–72.

Grigoropoulos, D. 2011. Ρωμαϊκοί Αμφορείς, in A. Kanta and C. Davaras (eds) *ΕΛΟΥΘΙΑ ΧΑΡΙΣΤΗΙΟΝ. Το Ιερό Σπήλαιο της Ειλειθυίας στον Τσούτσουρο*: 166–167. Herakleion: Demos Minoa Pediadas.

Hayes, J.W. 1971. Four early Roman groups from Knossos. *Annual of the British School at Athens* 66: 249–275.

Hayes, J.W. 1983. The Villa Dionysos excavations, Knossos: the pottery. *Annual of the British School at Athens* 78: 97–169.

Hayes, J.W. 2000. Roman pottery from the sanctuary, in J. Shaw and M. Shaw (eds) *Kommos* IV. *The Greek Sanctuary*: 312–335. Princeton: Princeton University Press.

Hayes, J.W. and A. Kossyva. 2012. Roman pottery, in L.V. Watrous, D. Haggis, K. Nowicki, N. Vogeikoff-Brogan and M. Schultz, *An Archaeological Survey of the Gournia Landscape: A Regional History of the Mirabello Bay, Crete, in Antiquity* (Prehistory Monographs 37): 167–174. Philadephia: INSTAP Academic Press.

Hope Simpson, R., P.P. Betancourt, P.J. Callaghan, D.K. Harlan, J.W. Hayes, J.W. Shaw, M.C. Shaw and L.V. Watrous. 1995. The archaeological survey of the Kommos area, in J.W. Shaw and M.C. Shaw (eds) *Kommos* I. *The Kommos Region and Houses of the Minoan Town*: 325–402. Princeton: Princeton University Press.

IC = Guarducci, M. 1935–1950. *Inscriptiones Creticae*, 4 vols. Rome: Libreria dello Stato.

Joyner, L. 2000. Appendix. Petrographic analysis of domestic pottery from Byzantine Eleutherna, in P.G. Themelis (ed.) *Πρωτοβυζαντινή Ελεύθερνα, τομέας Ι*: 223–235. Rethymnon: University of Crete.

Kalpaxis, Th. 1996. Ελληνιστικός κλίβανος κεραμικής στην αρχαία Ελεύθερνα, in I. Gavrilaki (ed.) *Κεραμικά εργαστήρια στην Κρήτη από την αρχαιότητα ως σήμερα: πρακτικά ημερίδας, Μαργαρίτες, 30 Σεπτεμβρίου 1995*: 41–45. Rethymnon: Historical and Folklore Society of Rethymnon.

Karagiorgiou, O. 2001. LR2: A container for the military *annona* on the Danubian border?, in S. Kingsley and M. Decker (eds) *Economy and Exchange in the East Mediterranean during Late Antiquity*: 129–166. Oxford: Oxbow Books.

Keay, S.J. 1984. *Late Roman Amphorae in the Western Mediterranean: A Typology and Economic Study: The Catalan Evidence* (British Archaeological Reports International Series 196). Oxford: Archaeopress.

Krywonos, W., G.W.A. Newton, V.J. Robinson and J.A. Riley. 1982. Neutron activation analysis of some Roman and Islamic coarse wares of western Cyrenaica and Crete. *Journal of Archaeological Science* 9: 63–78.

Lawall, M. and P. van Alfen (eds) 2011. *Caveat Emptor: A Collection of Papers on Imitations in Ancient Greco-Roman Commerce* (Marburger Beiträge zur Antiken Handels-, Wirtschafts- und Sozialgeschichte 28). Rahden: Marie Leidorf.

Limantzaki, L. 2011. Κεραμικοί κλίβανοι της εποχής της ρωμαικοκρατίας στην Κυδωνία, in M. Andreadaki-Vlazaki and E. Papadopoulou (eds) *Πεπραγμένα του Ι' Διεθνούς Κρητολογικού Συνεδρίου (Χανιά, 1–8 Οκτωβρίου 2006),* Vol. A5: 263–276. Chania: Philologikos Syllogos 'Ο Chrysostomos'.

Marangou-Lerat, A. 1995. *Le vin et les amphores de Crète de l'époque classique à l'époque impériale* (*Études crétoises* 30). Thessaloniki: Fondation Fany Boutari.

Markoulaki, S., J.-Y. Empereur and A. Marangou 1989. Recherches sur les centres de fabrication d'amphores de Crète occidentale. *Bulletin de Correspondance Hellénique* 113: 551–580.

Moody, J. 2012. Hinterlands and hinterseas: resources and production zones in Bronze Age and Iron Age Crete, in G. Cadogan (ed.) *Parallel Lives: Ancient Island Societies in Crete and Cyprus* (British School at Athens Studies 20): 233–271. London: British School at Athens.

Moody, J., L. Nixon, S. Price and O. Rackham. 1998. Surveying poleis and larger sites in Sphakia, in W.G. Cavanagh and M. Curtis (eds) *Post-Minoan Crete: Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College London, 10–11 November 1995* (British School at Athens Studies 2): 87–95. London: British School at Athens.

Moody, J., H.L. Robinson, J. Francis, L. Nixon and L. Wilson. 2003. Ceramic fabric analysis and survey archaeology: Sphakia Survey. *Annual of the British School at Athens* 98: 37–105.

Nixon, L., J. Moody and O. Rackham. 1988. Archaeological survey in Sphakia, Crete. *Echos du monde classique/ Classical Views* 32: 159–173.

Nixon, L., J. Moody, S. Price and O. Rackham. 1989. Archaeological survey in Sphakia, Crete. *Echos du monde classique/Classical Views* 33: 201–215.

Nixon, L., J. Moody, V. Niniou-Kindeli, S. Price and O. Rackham. 1990. Archaeological survey in Sphakia, Crete. *Echos du monde classique/Classical Views* 34: 213–220.

Nixon, L., S. Price, J. Moody and O. Rackham. 1994. Rural settlement in Sphakia, Crete, in P. Doukellis and L.G. Mendoni (eds) *Structures Rurales et Sociétés Antiques. Actes du colloque du Courfou (14–16 mai 1992)* (Annales Littéraires de l'Université de Besancon 508): 255–264. Paris: Les Belles Lettres.

Nixon, L. and S. Price. 2001. The diachronic analysis of pastoralism through comparative variables. *Annual of the British School at Athens* 96: 395–424.

Nixon, L., S. Price, O. Rackham and J. Moody. 2009. Settlement patterns in Medieval and post-Medieval Sphakia. Issues from the archaeological and historical evidence, in J. Bintliff and H. Stöger (eds) *Medieval and Post-Medieval Greece. The Corfu Papers* (British Archaeological Reports International Series 2023): 43–54. Oxford: Archaeopress.

Papadopoulos, J.K. (1992). ΛΑΣΑΝΑ, tuyères, and kiln firing supports. *Hesperia* 61: 203–221.

Peacock, D.P.S. and D.F. Williams. 1986. *Amphorae and the Roman Economy: An Introductory Guide.* London: Longman.

Peña, J.T. 2007. *Roman Pottery in the Archaeological Record*. Cambridge: Cambridge University Press.

Perlman, P. 2004. Crete, in M.H. Hansen and T.H. Nielsen (eds) *An Inventory of Archaic and Classical Poleis. An Investigation Conducted by the Copenhagen Polis Centre for the Danish National Research Foundation*: 1144–1195. Oxford: Oxford University Press.

Portale, E.C. 2011. Contenitori da trasporto, in A. DiVita and M.A. Rizzo (eds) *Gortina Agorà. Scavi 1996–1997* (Studi di archeologia Cretese 9): 123–182. Padua: Bottega d'Erasmo.

Portale, E.C. and I. Romeo. 2000. Le anfore locali di Gortina ellenistica e Romana. *Rei Cretariae Romanae Fautorum Acta* 36: 417–426.

Portale, E.C. and I. Romeo. 2001. Contenitori da transporto, in A. Di Vita (ed.) *Gortina* V.3. *Lo Scavo del Pretorio (1989–1995)*, t. 1. *I Materiali* (Monografie della scuola archeologica di Atene e delle missioni italiane in Oriente 12): 260–410. Padua: Bottega d'Erasmo.

Poulou-Papadimitriou, N. and E. Nodarou. 2014. Transport jars and maritime trade routes in the Aegean from the 5th to the 9th century AD. Preliminary results of the EU funded project 'Pythagoras II': the Cretan case study, in N. Poulou-Papadimitriou, E. Nodarou and V. Kilikoglou (eds) *LRCW4 Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*. *The Mediterranean: A Market without Frontiers* (British Archaeological Reports International Series 2616): 873–883. Oxford: Archaeopress.

Price, S.R.F. 2006. The Loutro peninsula and its resources in context, in *Ι' Διεθνούς Κρητολογικού Συνεδρίου (Χανιά, 1-8 Οκτωβρίου 2006)*, Abstracts: 85–86. Chania: Philologikos Syllogos 'O Chrysostomos'.

Price, S.R.F., T. Higham, L. Nixon and J. Moody. 2002. Sea-level changes in Crete: reassessment of radiocarbon dates from Sphakia and west Crete. *Annual of the British School at Athens* 97: 171–200.

Raab, H.A. 2001. *Rural Settlement in Hellenistic and Roman Crete: The Akrotiri Peninsula* (British Archaeological Reports International Series 984). Oxford: Archaeopress.

Riley, J.A. 1979. The coarse pottery from Berenice, in J. Lloyd (ed.) *Excavations at Sidi Khrebish, Benghazi (Berenice)*, Vol. 2 (Supplements to Libya Antiqua 5): 91–467. Tripoli: Department of Antiquities, Ministry of Teaching and Education, People's Socialist Libyan Arab Jamahiriya.

Sackett, L.H. 1992. Roman pottery, in L.H. Sackett (ed.) *Knossos from Greek City to Roman Colony: Excavations at the Unexplored Mansion* II (British School at Athens, Suppl. 21): 147–256. London: British School at Athens.

Tsatsaki, N. 2010. Residences, workshops or both? A study of Hellenistic houses at Nissi-Eleutherna (Crete), in S. Ladstätter and V. Scheibelreiter (eds) *Städtisches Wohnen im* östlichen *Mittelmeerraum 4. Jh. v. Chr.–1. Jh. n. Chr.: Akten des internationalen Kolloquiums vom 24.–27. Oktober an der Österreichischen Akademie der Wissenschaften*: 67–79. Vienna: Österreichischen Akademie der Wissenschaften.

Tsatsaki, N. and E. Nodarou. 2014. A new Hellenistic amphora production centre in west Crete (Loutra, Rethymnon): study and petrographic analysis of the pottery assemblage. *Annual of the British School at Athens* 109: 287–315.

Vogeikoff-Brogan, N. 2012. Hellenistic and Roman periods: expansion of the isthmus in an international era, in L.V. Watrous, D. Haggis, K. Nowicki, N. Vogeikoff-Brogan and M. Schultz, *An Archaeological Survey of the Gournia Landscape: A Regional History of the Mirabello Bay, Crete, in Antiquity* (Prehistory Monographs 37): 81–93. Philadelphia: INSTAP Academic Press.

Vogeikoff-Brogan, N. and S. Apostolakou. 2004. New evidence for wine production in east Crete in the Hellenistic period, in J. Eiring and J. Lund (eds) *Transport Amphorae and Trade in the Eastern Mediterranean: Acts of the International Colloquium at the Danish Institute at Athens, September 26–29, 2002* (Monographs of the Danish institute at Athens 5): 417–427. Aarhus: Aarhus University Press.

Vogeikoff-Brogan, N., E. Nodarou and M.-C. Boileau. 2008. New evidence for wine production in east Crete in the Hellenistic period: an integrated approach of stylistic study and thin section petrography, in Y. Facorellis, N. Zacharias and K. Polikreti (eds) *Proceedings of the 4th Symposium of the Hellenic Society for Archaeometry, National Hellenic Research Foundation, Athens, 28–31 May 2003* (British Archaeological Reports International Series 1746): 327–334. Oxford: Archaeopress.

Vogt, C. 2000. The early Byzantine pottery, in P.G. Themelis (ed.) *Πρωτοβυζαντινή Ελεύθερνα, τομέας Ι*: 39–199. Rethymnon: University of Crete.

Weinberg, G.D. 1960. Excavations at Tarrha, 1959. *Hesperia* 29: 90–108.

Williams, D. 2003. Cretan wine in Roman Britain. *Journal of Roman Pottery Studies* 10: 26–31.

Yangaki, A.G. 2004–2005. Amphores crétoises: le cas d'Éleutherna, en Crète. *Bulletin de Correspondance Hellénique* 128–129: 503–23.

Yangaki, A.G. 2005. *La céramique des IVe - VIIIe siècles ap. J.-C. d'Eleutherna.* Athens: University of Crete.

Yangaki, A.G. 2016. Pottery of the 7th–early 9th centuries AD on Crete: the current state of research and new directions, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 199–234. Oxford: Oxbow Books.

Zimmerman Munn, M.L. 1985. A late Roman kiln site in the Hermionid, Greece. *American Journal of Archaeology* 89: 342–343.

12.

Health, Diet and Lifeways at Knossos during the Hellenistic, Roman and Late-Antique Periods

Anna Moles

Introduction

Knossos was an important centre within Crete and in wider Aegean networks throughout much of its history since it was established as the earliest-known urban centre in Europe during the Bronze Age. Though it experienced periods of urban development and decline, in terms of population size, infrastructure and economic success, it remained a well-connected and politically important centre until the late-Antique period. This research, which has been the subject of my doctoral dissertation, investigates how changes in the urban environment, in its social, political and economic factors, affected the health, diet and lifestyle of the population at Knossos during the later phase of urban development and decline, from a study of the human skeletal remains from Hellenistic, Roman, and late-Antique tombs.

At the time of the Colloquium on Hellenistic and Roman Crete in 2016, this research was still in the data collection stage, and therefore these results were necessarily preliminary and based on a proportion of the assemblage that had been studied. It is now possible to present some updated results based on the study of the available and suitable assemblage of human skeletal remains from Hellenistic, Roman and late-Antique Knossos. This skeletal collection came from British School at Athens excavations from the 1930s to 1970s.

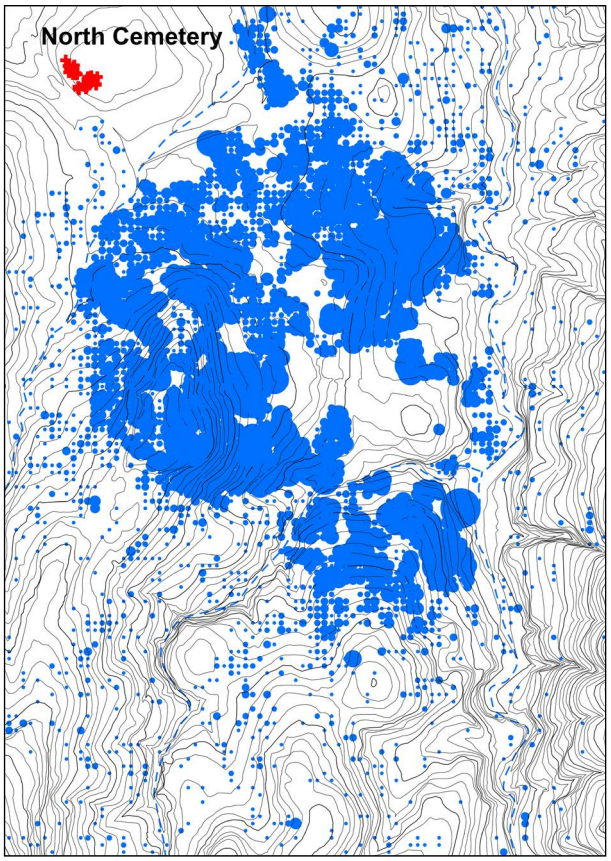


Figure 12.1. Hellenistic tombs (red crosses) with studied skeletal material, plotted on map of 'Hellenic' KULP survey sherds within the Knossos area (map by T. Whitelaw).

The recent work by the Knossos Urban Landscape Project (KULP) suggests a gradual expansion of the city through the Archaic and Classical periods with Knossos becoming one of the major Aegean centres of the Hellenistic period, and one of a small number of dominant centres on Crete, reaching its maximum extent before the Roman conquest of Crete (Trainor 2019; Whitelaw *et al.* 2019). Though on a slightly reduced scale, it continued as an urban centre following the Roman conquest of Crete in 69–67 BC and was formally founded as a Roman colony in 27 BC, flourishing for several centuries as the subject of public and private building works. After the 2nd century AD, there is less evidence for significant new building projects (other than the basilica churches of the 5th and 6th centuries), though with only limited excavations, understanding of this period is restricted, and occupation is known to have continued at the site. There was a continual contraction of the city limits and a reduction of population at the site, until it was eventually reduced to nothing more substantial than a small village by the end of the 7th century AD (Sweetman 2004a; Trainor 2019: 12).

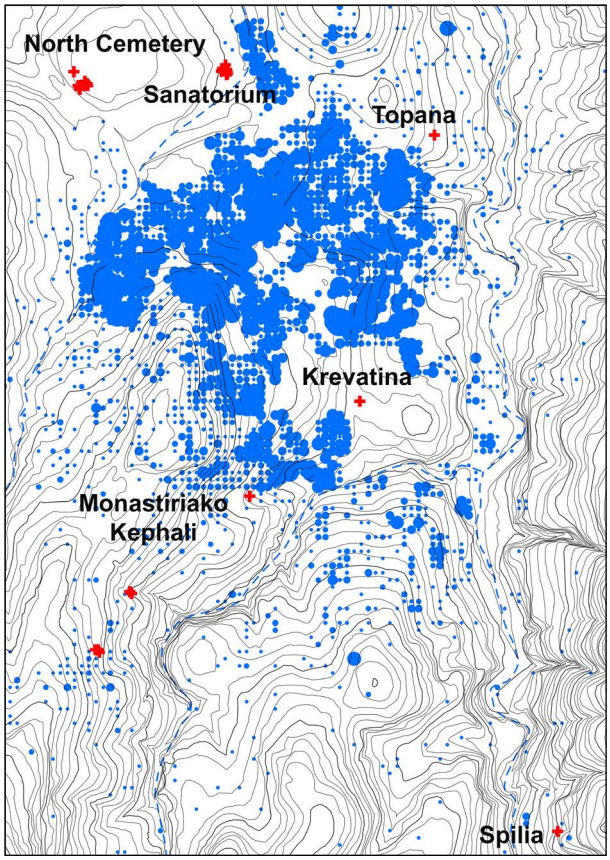


Figure 12.2. Roman tombs (red crosses) with studied skeletal material, plotted on map of early to middle-Roman KULP survey sherds within the Knossos area (map by T. Whitelaw).

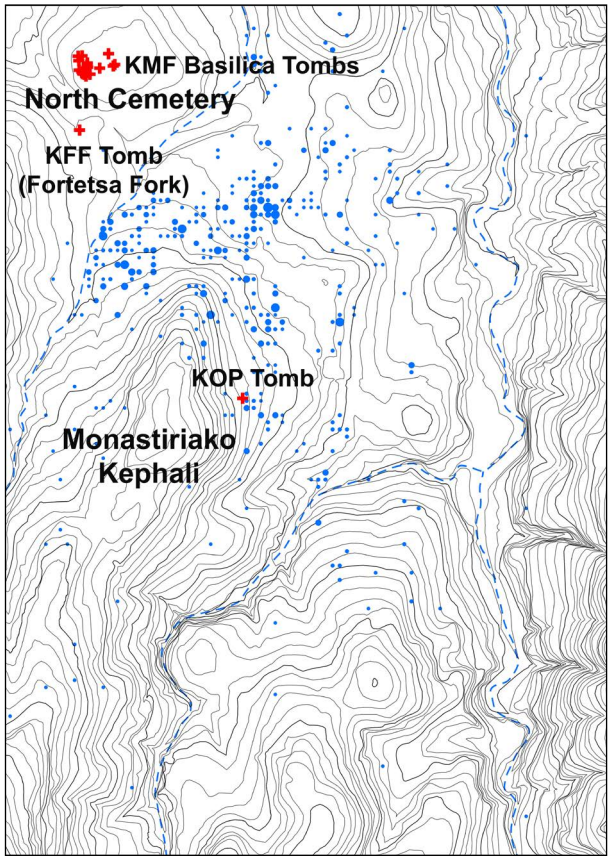


Figure 12.3. Late-Antique tombs (red crosses) with studied skeletal material, plotted on map of late Roman to late-Antique KULP survey sherds within the Knossos area (map by T. Whitelaw).

Material

Skeletal remains offer a fundamental source of information for the study of health and diet. However, they should not be relied upon in isolation but should be considered alongside other archaeological and historical resources. Although the skeletal remains can offer a broad range of evidence derived from past contexts, supplementary information can help to construct a more complete picture.

The material comes from a variety of cemeteries throughout the Knossos valley. For the Hellenistic period, the only tombs with skeletal material available for study came from the North Cemetery (**Figure 12.1**). The skeletal material from the Roman period came from a wide range of tomb locations throughout the Knossos area (**Figure 12.2**). The majority of skeletal material from the late-Antique period also came from the North Cemetery, in association with the Knossos Medical Faculty (KMF) basilica church (Sweetman and Becker 2005), but the Fortetsa Fork osteotheke and an individual grave (KOP) are also represented in the assemblage (**Figure 12.3**).

The condition of the bones, the excavation methods for its initial retrieval, and the recording and preservation of contextual information were often not optimal. Many excavated burial contexts from Knossos have produced very poorly preserved skeletal material, often to the extent that it preserved no diagnostic elements for study. The bones have suffered from poor excavation due to the lack of value attributed to this field of study at the time. Throughout the 20th century, osteoarchaeology was a slowly developing discipline and only really took off in the last quarter of that century. The excavation and retention of skeletal remains became an essential part of excavations, with specialists ensuring the proper excavation of the remains as well as carrying out post-excavation studies using the now-standard methods (Armelagos and Gerven 2003; Buikstra and Beck 2006; Lagia *et al.* 2014; Larsen 2018; Roberts *et al.* 2005). For the different contexts and excavations that produced material for this study, differing degrees of care were afforded to the retrieval and preservation of elements. Commingling was a cultural pattern; many of the studied tombs were collective burials, with reorganisation and displacement of bones to make space for later burials and potentially secondary re-burial in osteothekai.

The value of the present study lies not only in the fact that it utilises material that has been largely overlooked for a generally understudied time period in Crete, but also in its general approach to using legacy collections from old excavations in very poor condition and applying methods to maximise the information that can be obtained from it.

Methods

The methods used to consider how the social, economic and political changes at Knossos impacted aspects of the health and lifestyle of its inhabitants involved the assessment of the demography, diet, and activity levels in the population. In terms of demography, minimum numbers of individuals, age-at-death, and sex determination demonstrated the composition of the assemblage and enabled a broad assessment of mortality and life expectancy in the population. A reconstruction of characteristics of the diet was carried out using stable isotope analysis and dental disease. Joint diseases and entheseal changes at muscle attachment sites were used to consider broad activity levels in the population and to infer changes occurring in the lifestyle of the inhabitants of Knossos and the composition of society in terms of hierarchy and labour division.

Demography

The age-at-death and sex determinations of individuals, as well as estimations of the minimum number of individuals (MNI) for each tomb, form a fundamental first step in the investigation of any skeletal assemblage, as they provide a core of palaeodemographic data important for all further analyses. These analyses are important for understanding the composition of the population and past population dynamics. The understanding of the age and sex structure of the skeletal assemblage provides variables for the analysis of diet and disease, and for the study of variation within the population. Age-at-death gives a very approximate indication of life expectancy (only by broad age category) of the ancient Knossians, which is investigated for variation across the time periods.

Minimum numbers of individuals (MNI)

In the 109 tombs studied, there was an MNI of 537 individuals: 347 adults (Old: 17, Middle: 65, Young: 131, Unaged: 134), 43 adolescents, 86 children, 43 infants and 18 neonates. Within the adults, 134 individuals fall into this 'unaged' adult category, as they can be identified as adult but there are no finer ageing criteria available. The MNI in any individual tomb ranged from one to 54, with one individual in many of the North Cemetery Hellenistic graves (KMF/78, KS2:62)[1] to 54 in the late-Antique Fortetsa Fork osteotheke (KFF/74 Tomb 1, KS2:59), with the second largest MNI of 42 coming from the Roman-built tomb at the Sanatorium Basilica (KSM/60 Tomb 1a, KS2:74).

The Hellenistic assemblage consisted of an MNI of 82 from 61 graves. Forty-eight of the Hellenistic graves contained a single individual, while seven were double burials, five graves contained three individuals, and one had five individuals (three adults, one child and one neonate).

For the Roman period, there were 29 tombs and a total MNI of 231. The numbers of individuals in Roman tombs ranged from one to 42, with a mean MNI of eight. This would be expected from the diverse range of tomb forms, with individual burials in the tile graves to large numbers of burials in the chamber and built tombs.

There were 19 tombs studied from the late-Antique period, with an overall MNI of 223. There was one stone-lined tomb with a single inhumation. The other late-Antique tombs, which were all some form of built or stone-lined structure, varied in MNI from two to 54, with an average of 12. Most of these are osteothekai (ossuaries) and are interpreted as secondary burials, but in some cases, it seems they also contained primary burials.

Age-at-death

Table 12.1 and **Figures 12.4–6** present the proportions of individuals in each age category by time period (i.e., the numbers in each age category as a percentage of the total MNI for each time period), making the different time periods more directly comparable than if counts were used. All age groups are represented in all time periods, other than the absence of neonates in the Hellenistic period. The Young Adult age category has the largest number of individuals for every time period. This suggests that life expectancy was not very high in any of these periods.

The most noticeable difference between the time three periods represented by this material is that there are relatively few sub-adults in the Hellenistic period, representing only 14% of all individuals, compared to 37% in the Roman sample and 39% in the late-Antique assemblage. Of the 61 Hellenistic graves, 48 were single-individual inhumations, but there were no sub-adult individual burials, other than three adolescents, which, being close to physical maturity, may have been considered as adults by society. This indication of a bias in age representation of those being buried in the North Cemetery for the Hellenistic assemblage makes it harder to compare to the other time periods, but the adult death profiles can still be compared.

[1] This refers to the excavation code, including the year of excavation (in this case 1978), and the KS2 number refers to the numbers of the Hood and Smyth (1981) survey of the Knossos area.

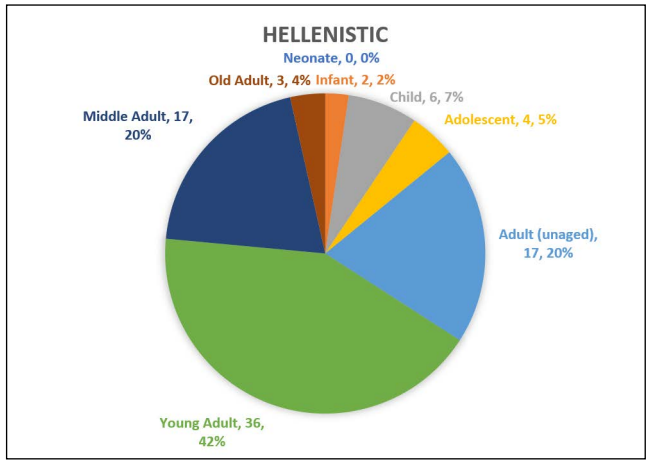


Figure 12.4. MNI and proportions of individuals for each age category for the Hellenistic period analysed sample.

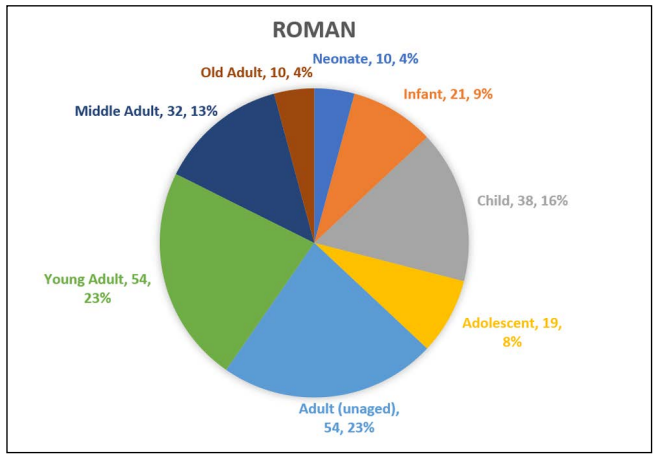


Figure 12.5. MNI and proportions of individuals for each age category for the Roman period analysed sample.

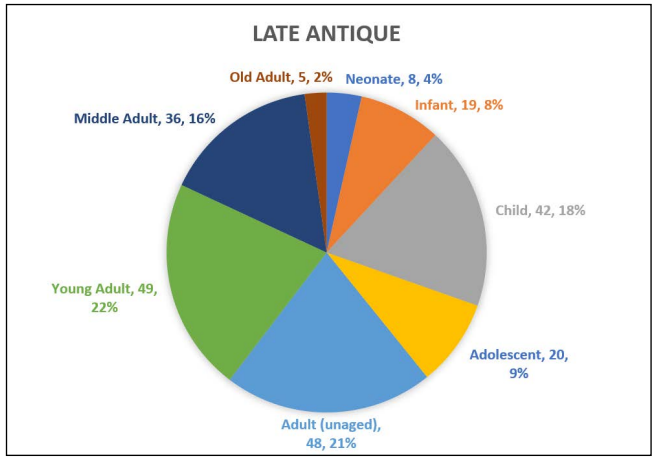


Figure 12.6. MNI and proportions of individuals for each age category for the late-Antique period analysed sample.

Time Period	Neonate	Infant	Child	Adoles-cent	Unaged Adult	Young Adult	Middle Adult	Old Adult
Hellenistic	0.0%	2.4%	7.1%	4.7%	20.0%	42.4%	20.0%	3.5%
Roman	4.2%	8.8%	16.0%	8.0%	22.7%	22.7%	13.4%	4.2%
Late Antique	3.5%	8.4%	18.5%	8.8%	21.1%	21.6%	15.9%	2.2%

Table 12.1. Percentages in each age category of the overall MNI for each time period.

Figures 12.7–9 depict the proportions of adults in each of the Young, Middle and Old adult age categories for each time period. This avoids the skew that the different numbers of subadults for each time period can introduce into the comparison of the proportions of adults in each age group. This closer inspection of the adult categories (excluding the unaged adults) indicates that adult life expectancy is, in fact, lowest in the Hellenistic period, with relatively few individuals surviving into Middle or Old adulthood, compared to either the Roman or late-Antique periods. All three time periods have the same pattern of the Young Adult category being the best represented, followed by Middle Adult, and lastly the Old Adult group, demonstrating life expectancy was not very high in any period. However, while the distribution of individuals is quite similar for the Roman and late-Antique periods, the Hellenistic assemblage is markedly different, with a greater proportion of the population dying in Young adulthood.

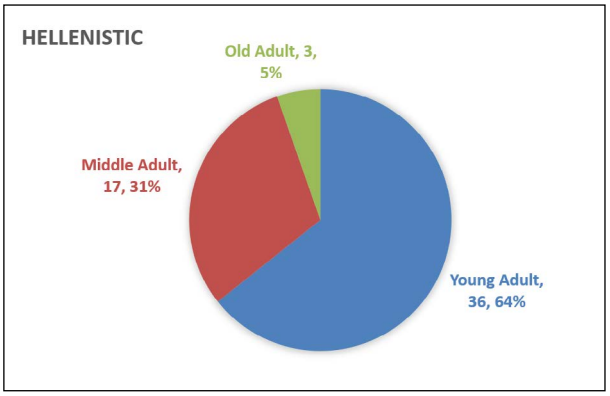


Figure 12.7. Proportions of each age category that compose the adult MNI in the Hellenistic period analysed sample.

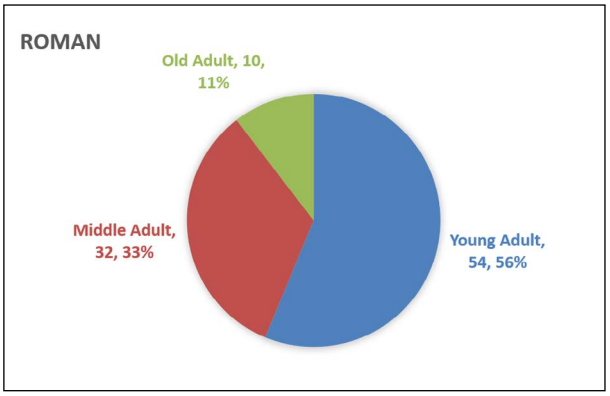


Figure 12.8. Proportions of each age category that compose the adult MNI in the Roman period analysed sample.

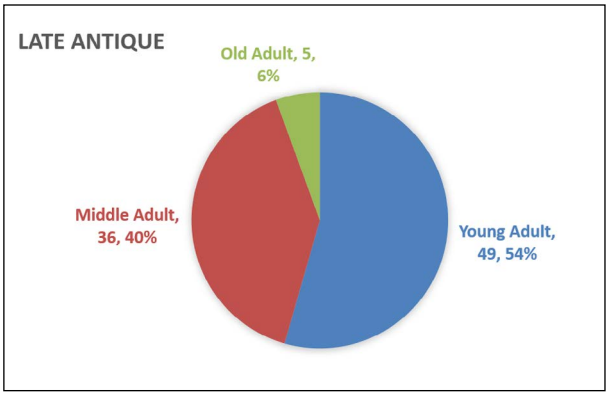


Figure 12.9. Proportions of each age category that compose the adult MNI in the late-Antique period analysed sample.

Sex

The sex distribution profiles for the Roman and late-Antique periods are very similar, with close to an equal distribution between the sexes, with marginally more males in each case. However, the Hellenistic distribution is markedly skewed, with two thirds of adults (of identified sex) being female. The Hellenistic period also has the highest proportion of adults of identifiable sex, with 67%. This, again, may indicate that the Hellenistic North Cemetery assemblage is not fully representative of the entire population, and that a particular demographic or social sub-set of society was being buried in this cemetery. It is also possible that significant numbers of young adult males died away from the city, as soldiers, mercenaries, merchants, emissaries, or ambassadors. This is suggested by the ancient texts,[2] though further evidence for such a movement of people should be sought primarily in the material culture.

Diet

Stable isotope analysis

The changing diet of the population at Knossos was investigated using both stable isotope analysis and dental disease. Stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope analyses of bone collagen enable gross characteristics of diet to be determined. The carbon signatures can indicate whether C3 or C4 plants were being consumed. These are plants that fix carbon via different photosynthetic pathways, and the majority of plants in Europe at this time were C3 plants, including wheat and barley. Elevated carbon values can demonstrate the inclusion of C4 plants, which are tropical plants, such as maize, millet, sorghum and sugarcane (Katzenberg 2008: 423; van der Merwe 1982: 596–597). The majority of C4 plants did not arrive in Europe until the medieval period, though millet has been identified since the Neolithic at Knossos and other sites in Greece (Efstratiou *et al.* 2004; Livarda and Kotzamani 2013).

[2] Strab. 10.4.9–10; Polyb. 6.46.9, 6.47.5, 8.16.4–7, 33.16.4; Plut. *De frat. amor.* 490B, *Am. narr.* 761D; Diod. Sic. 30.13; Homer, *Od.* 19.173–179; *Anth. Pal.* 7.654 (as referenced in Marshall and Towner 1999: 202).

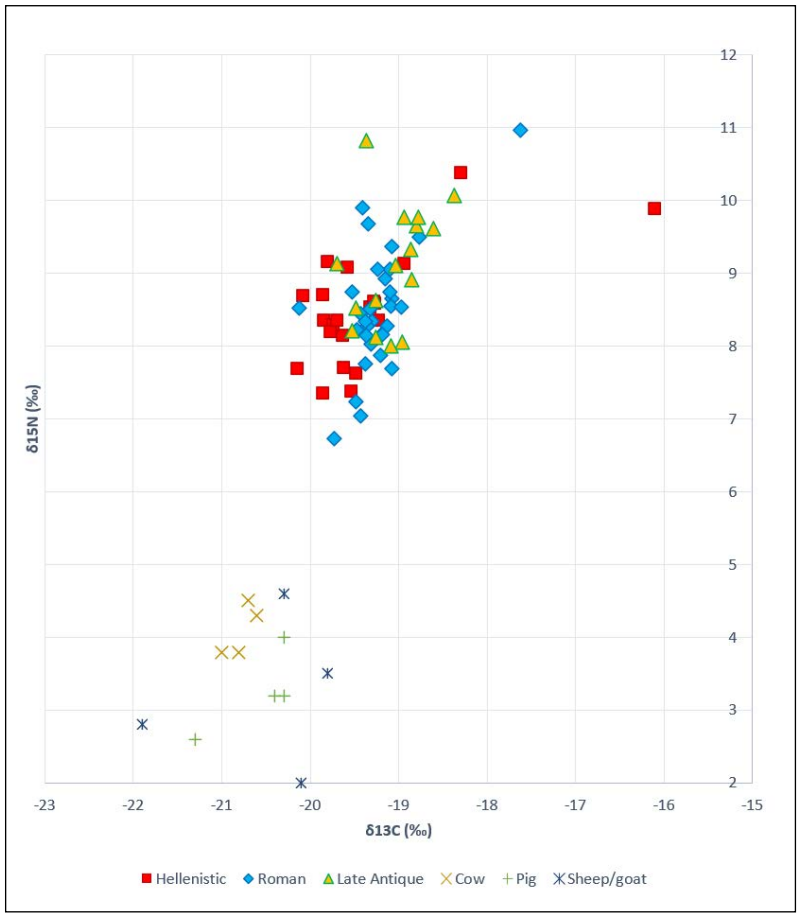


Figure 12.10. Scatter plot of isotope values for each time period and the animal control values.

Substantial consumption of legumes can often be identified, due to their $\delta^{15}N$ values being very similar to the atmospheric nitrogen (0‰, i.e., lower than other plants) (Brill 1977). Nitrogen isotope values increase through each level of the food chain (known as fractionation, which occurs through processes such as photosynthesis and metabolism); therefore, the use of plant and animal control samples can help to identify whether meat was being consumed (Ambrose and Norr 1993; Bocherens and Drucker 2004; DeNiro and Epstein 1978; Katzenberg 2008; van der Merwe and Vogel 1978). Marine- and land- (terrestrial) based diets can also be distinguished from one another due the different carbon sources in the sea and the atmosphere. Longer food chains in marine environments result in marine mammals at the top of the food chain also having elevated $\delta^{15}N$ values, compared to most terrestrial carnivores (Lubell *et al.* 1993: 205; Schoeninger and DeNiro 1984). Therefore, there can also be a distinction between humans consuming shellfish and small fish, compared to those eating larger fish further along the food chain.

Figure 12.10 plots $\delta^{13}C$ against $\delta^{15}N$ to show the values for the individual samples for the different time periods. It also shows that the human values are more elevated than the control sample of local animal values. As no contemporary control samples were available, these animal controls come from Nafplioti's (2016) study of the Bronze Age diet at Knossos, and the work of the AGRICURB project provides further local isotope controls (Isaakidou *et al.* 2019; Nitsch *et al.* 2019). The mean faunal $\delta^{15}N$ is 3.5‰ (s.d.= 0.8, *n*=12), with the most elevated faunal $\delta^{15}N$ value at 4.6‰. The human values range from +3.2‰ to +7.5‰ above the mean faunal $\delta^{15}N$ value, and +2.1‰ to +6.4‰ over the maximum faunal $\delta^{15}N$ value. The elevation of the mean human $\delta^{15}N$ value above the mean faunal value is 5.1‰ and the elevation in $\delta^{13}C$ values is 1.4‰. Therefore, all the human samples demonstrate some meat consumption and the higher level of elevation in some isotopic values indicates some marine food consumption.

The animal samples have quite a wide range of variation, with some extremely low values (e.g., a sheep/goat with $\delta^{15}N$ 2‰), possibly suggesting the inclusion of legumes in some fodder. Nafplioti (2016) discusses the wide-ranging values of the sheep/goat samples being due to a greater variability in diet because of a wider geographical range for the sheep/goat individuals; she observes that the pig diet reflects an herbivorous (rather than omnivorous) diet. The Unexplored Mansion Roman animal bone assemblage indicates that sheep/goat was the main meat source (Bedwin 1992);

this can therefore account for some of the variability in the human values. Archaic law inscriptions from Crete indicate widespread grazing, with treaties between city-states for access to upland grazing;[3] this could account for varied diets amongst livestock (Chaniotis 1999: 192–197; Gagarin and Perlman 2016: 42, 104).

The picture is generally one of increasing values over time for both $\delta^{13}C$ and $\delta^{15}N$, though there was no statistically significant difference between the mean values for each time period. The Roman sample has more extreme lowest and highest $\delta^{15}N$ values, demonstrating a wider range of values than in the Hellenistic period. However, the late-Antique mean $\delta^{15}N$ is substantially (0.6‰) higher, and this proved to be highly significant using a t-test of equal means, compared to the earlier periods combined (t=2.67, p=0.009). This sort of margin can be regarded as substantial within the generally limited variation, with almost all values within a range that suggests a C3 terrestrial diet, largely with adequate access to animal products for fulfilling dietary protein requirements.

The Roman samples are consistently slightly more positive in their $\delta^{13}C$ values than the Hellenistic samples. This was not statistically significant for a test of equal means, probably due to outlier Hellenistic values with higher carbon isotope values, but when tests for equal medians and variances were run, the difference in $\delta^{13}C$ values between the Hellenistic and Roman groups proved to be statistically highly significant (Mann-Whitney test for equal medians: U=176.5, p=0.006; F-test for equal variances: F=4.89, p=0.000). This elevation in $\delta^{13}C$ values could be due to a small amount of C4 crops being introduced into either animal or human diets, low trophic level fish or small amounts of fish consumption or could be a variation in the type of meat being consumed or type of feed given to the livestock. The late-Antique samples are more elevated in both $\delta^{13}C$ and $\delta^{15}N$, compared to both the Hellenistic and Roman samples. None of the later samples have $\delta^{15}N$ values lower than 8‰, and over half the values are higher than 9‰. This suggests that all the individuals in the late-Antique sample had ample quantities of meat or animal products to satisfy the body's protein requirements and that some were also consuming fish.

Dental disease

The study of dental disease can be extremely informative for aspects of ancient diets: everything that is eaten comes into contact with the teeth. Although a series of endogenous, pathogenic, and environmental processes influence the manifestation of dental diseases, diet is the most important factor (Hillson 2008a: 301). Dental caries is a disease process characterised by the focal demineralisation of dental hard tissues by organic acids produced by bacterial fermentation of carbohydrates in the diet (Larsen 2015: 67; Temple 2015: 434). It manifests itself variously as it progresses from slight enamel opacities to extensive cavities involving the partial or complete destruction of the crown and roots of teeth (Hillson 2008b: 117). It is primarily indicative of a high carbohydrate diet; for example, starches from cereals or sugars from fruit or honey.

Results are calculated by individual tooth, observing firstly whether caries of any degree is present or absent. Secondly, caries in the form of a cavity is considered, excluding the early signs of the presence of caries represented by the first two stages in the Hillson (2001) method, to make the results comparable with other assemblages using simpler caries scoring methods (generally as present or absent by tooth or by individual with the formation of a cavity). Finally, a cumulative score is presented which is the sum of the progression stage of each lesion on each site of a tooth, which is then totalled for all the teeth in any time period and divided by the total number of carious teeth to give an average caries score per tooth, which represents the mean severity of carious lesions. As well as presenting raw numbers of carious teeth (generally in parentheses expressed as a fraction of the total scorable teeth), the results are presented as percentages of the total number of scorable teeth, in order to make the results comparable across different time periods.

The overall caries results and the breakdown by time period are displayed in **Table 12.2**. For all time periods combined, a total of 1572 teeth were recorded. There was a total of 274 (17.4%) carious teeth and a total of 151 (9.6%) teeth with cavities (i.e., caries score 3 and above using the Hillson 2001 method). The results are displayed in **Figure 12.11** and demonstrate a peak in the prevalence of caries in the Roman period, occurring in 25.2% (124/493) of teeth, compared to only 8.4% (40/476) in the Hellenistic period and 18.2% (110/603) in the late Antique. The difference between caries prevalence for the three time periods was statistically highly significant (X^2=47.7, p=0.00), as can also be seen from the confidence intervals in **Figure 12.11**, which do not overlap for caries. Although there is less difference for cavities prevalence, the same relative pattern can be observed, with 6.3% (30/476) for the Hellenistic period, 12.8% (63/493) for the Roman period, and 9.6% (58/603) for the late-Antique period.

The severity of carious lesions appears to be greatest in the Hellenistic period, with the smallest difference between the occurrence of any-caries versus carious-cavities meaning relatively fewer occurrences of caries in the initial stages and more severe lesions. This is also demonstrated in the average caries score per carious

[3] For example, *SEG* 35.991B. See Chaniotis (1999: 195) for a discussion of this inscription.

	Caries (any)	Caries (cavity)	Caries Score (total)	Caries mean score (by all teeth)	Caries mean score (by carious teeth)	Total Teeth
Hellenistic	40	30	277	0.6	6.9	476
Roman	124	63	731	1.5	5.9	493
Late Antique	110	58	623	1.0	5.7	603
Total (all periods)	274	151	1631	1.0	6.0	1572

Table 12.2. Caries counts and scores by tooth for each time period.

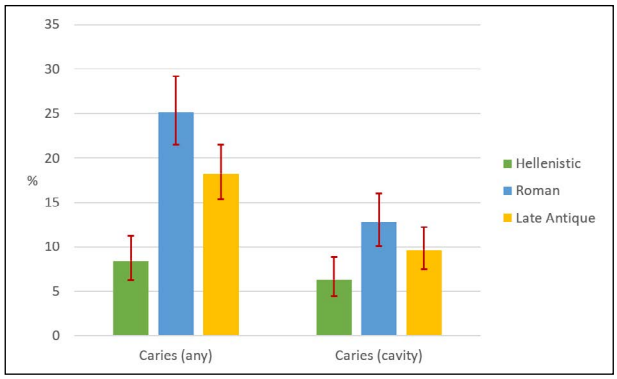


Figure 12.11. Prevalence of caries and cavities by tooth for each time period with 95% confidence interval error bars.

tooth of 6.9 for the Hellenistic period, 5.9 for the Roman period, and 5.7 for the late-Antique period. However, it should also be considered that, due to the fact that the surface condition of the Hellenistic teeth was often observed to be more degraded, this result could be due to a difficulty in observing the early manifestations of caries in some teeth. However, if the average caries score is divided by the total number of teeth (carious and non-carious), the Hellenistic period has the lowest score (0.6), the Roman period has the highest score (1.5), and the late-Antique score was intermediate (1.0). This indicates the cumulative effect of the existence of caries and the severity of the lesions and suggests that caries was worst in the Roman period.

Dental health was at its worst in the Roman period, which suggests that the Roman diet was more cariogenic than in the preceding or succeeding periods; this is likely to represent a high carbohydrate diet of starchy foods such as wheat. However, wheat is likely to have been the staple food across all these time periods, and the difference in the Roman period may have been a greater addition of sugars to the diet, in the form of fruit and honey, or could be due to improved preparation techniques and technologies producing a more refined and sticky carbohydrate diet or increased frequency of eating events (i.e., continuous snacking rather than occasional meals).

The Hellenistic period had remarkably low levels of caries compared to the later time periods. While there were some concerns regarding the poorer state of preservation of much of the Hellenistic material, this is unlikely to account for this level of difference between these groups of teeth. Not only was the Hellenistic material assessed and deemed suitable for study, but there were also some Roman contexts studied that were in a similar state of preservation. Hellenistic Knossos was a large, complex urban centre that at least to some extent, had a centralised, administered food production and distribution system in the form of the *syssitia*. This did not continue into the Roman period; therefore, it is possible that food types, preparation techniques, and technologies could have been somewhat different.

It is possible that with the change in ownership of the 'Capuan lands' (some of the agricultural land to the south of Knossos) and the establishment of a colonist community, that there was a change in types of foods being produced and desired by the resident population, such as fruit and honey. This could account for the increase in caries in the Roman period, though there is evidence for fruit consumption and honey production from earlier periods too. The change in the economy of Crete at this point of transition meant that a great deal more food types and abundance would have been accessed through trade (Chaniotis 1991: 211). The climate in the early Roman period (*c.* 100 BC–AD 200) was particularly warm and wet, with a significant reduction in seasonality allowing for longer growing periods allowing for longer growing seasons and more abundant yields and therefore a greater excess of foodstuffs for export (Moody 2014: 29; 2016: 65–66). The climate change in the 3rd century AD, a cold dry event, would have shortened the growing season and this would have contributed to the changes in the economy and diet at this time.

The difference in caries prevalence may also be due to groups of differing social status being represented in the Hellenistic and Roman graves within the assemblage. The Hellenistic assemblage was heavily dominated by females, and the tomb forms were simpler than in the later periods indicating a potentially lower social class. Females (generally and for the Hellenistic period specifically) and pit grave individuals had lower caries rates than males or those buried in the later, more elaborate tomb forms.

The late-Antique period sees a fall in caries rates compared to the Roman period, though the prevalence is still higher than it was in the Hellenistic period. The isotopic analysis indicated a higher animal protein component in late-Antique diets, which could partially explain this change in dental disease since the Roman period. The area of urban occupation in this period was steadily contracting, and the settlement would have had a significantly smaller population than in the Hellenistic and Roman periods. A centralised food production system and mass crop production (e.g., vines) for overseas trade may no longer have existed to the same extent. The amphora dumps at Knossos in the north (imports) and the south (local) appear to essentially be early Roman (Trainor 2019), and it has been proposed that large-scale production and exportation of wine seems to have come to an end by *c.* AD 300 (Marangou 1999: 278). However, amphora production did continue on Crete into the 7th century AD and at several sites the proportion of imports in the ceramic assemblage was greater in the late-Antique period than it had been previously (Frend and Johnston 1962: 229; Hayes 2001: 434; Gallimore 2015: 209, 2016: 185).

The indications of an improvement in diet, in terms of fewer carbohydrates and increased inclusion of fish in some diets, suggests that a more diverse diet was accessible and affordable for the reduced population remaining at Knossos (as represented in the skeletal assemblage). The higher caries rates in the late-Antique period, compared to other late-Antique Cretan assemblages (Bourbou 2010: 47): indicates differences in either diet or eating habits at Knossos. Evidence for Roman ceramic beehives is abundant on Crete, particularly in the west and centre of the island, though it is unclear whether this was on a scale for mass export[4] or if the honey and wax was produced on a subsistence level (Francis 2016: 84). There is sparse evidence for Hellenistic beekeeping at Knossos, but such evidence tends to be late Hellenistic and is generally uncommon throughout Crete until the Roman period, though it is possible non-ceramic hives were used (Eiring 2001: 129; Francis 2016: 87; Homann-Wedeking 1950: 185). A small number of examples from Gortyn, Eleutherna, and Sphakia demonstrate change in ceramic beehive shape in the late-Antique period and attest to continued honey production on Crete at this time (Francis 2016: 89).

Activity

Throughout much of the history of osteoarchaeology as a discipline, scholars have attempted to reconstruct activity or occupation from the human skeleton. This is fraught with hazards as scholars have often been over-ambitious in the depth and specificity of this type of reconstruction of past human activities (Capasso *et al.* 1999; Hershkovitz *et al.* 1996; Jurmain 1977; 1980; Larsen *et al.* 1995; Merbs 1983; Walker and Hollimon 1989). It is not possible to make assertions about specific 'occupations' of individuals, inferred from bone lesions. Similar bone lesions can have a variety of causes, and the same activity can manifest itself differently in different individuals. What this study has produced, on a population level, is a general assessment of broad activity levels, to differentiate between a heavy manual labouring lifestyle and a relatively inactive one. This is accomplished by looking at the prevalence of joint diseases (osteoarthritis and intervertebral disc disease) and entheseal changes at certain muscle attachment sites on the bone. There are also multifactorial influences (genetic, environmental, and behavioural) all contributing to the manifestation of these conditions. As bone forming conditions, the changes vary in their expression between different individuals, with some individuals being genetically more inclined to form bone at such sites than others (Waldron 2009: 72). Therefore, there may not always be a direct correspondence between rigorous activity or heavy loading at an enthesis or joint margin and the production of new bone.

Osteoarthritis

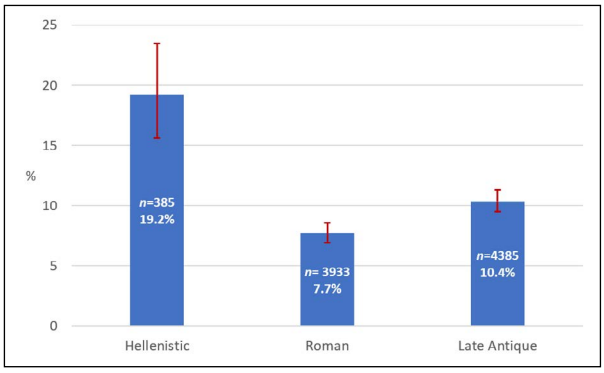


Figure 12.12. Percentage of osteoarthritis present for all joint surfaces combined in each time period with sample sizes (n) and 95% confidence interval error bars.

Osteoarthritis was recorded on 9.5% (831/8703) of all joint surfaces: 19.2% (74/385) of joints for Hellenistic individuals, 7.7% (303/3933) of Roman period joint surfaces, and 10.4% (454/4385) of joints from the late-Antique period (**Figure 12.12**). The differences between the time periods were highly statistically significant (Hellenistic versus Roman: X^2=58.37, p=0.000; Roman versus late Antique: X^2=17.59, p=0.000), as demonstrated by the non-overlapping confidence intervals on the graph.

[4] There is evidence of a Cretan amphora found at Pompeii that had a *titulus picti* appearing to state 'thyme-flavoured honey' (Peña 2007: 104).

Intervertebral disc disease

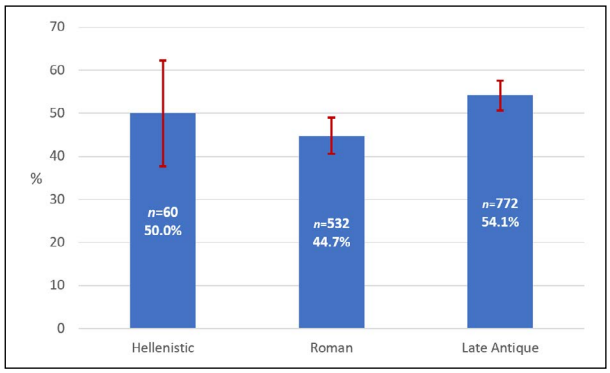


Figure 12.13. Prevalence of intervertebral disc disease (IVDD) for each time period with sample sizes (n) and 95% confidence interval error bars.

Intervertebral disc disease (IVDD) was recorded in 50.3% of scorable vertebrae. A total of 1364 vertebral bodies (excluding the C1, including the sacrum) were recorded for IVDD. **Figure 12.13** shows the prevalence of IVDD by time period. Similar to osteoarthritis, from the Hellenistic period (50%, 30/60) to the Roman period (44.7%, 238/532), the prevalence of IVDD decreases and then increases in the late-Antique period (54.1%, 418/772). However, the difference is smaller than for osteoarthritis, and, in the case of IVDD, the late-Antique period has a higher prevalence than the Hellenistic period (which was the other way around for osteoarthritis). The Hellenistic period is, however, represented by a very small, documented sample for the number of individuals that it represents (adult MNI=70, each with 24 vertebrae would give a potential sample size of 1680 vertebrae). The confidence interval error bars suggest no significant difference between the Hellenistic period and either of the later periods, though the difference between the Roman and late-Antique periods is a significant one, as the 95% confidence intervals do not overlap. For each vertebral region (cervical, thoracic and lumbar), the Roman result was the lowest, supporting the overall lowest prevalence for this time period.

Entheseal changes

Of the selection of commonly affected enthesis sites selected for study, 1023 entheses were recorded. Of those, 297 (29%) displayed signs of either minor or prominent entheseal changes. The majority of cases recorded were minor manifestations.

The results for the prevalence of entheseal changes are displayed in **Figure 12.14**. Entheseal changes occurred in 41.9% (36/86) of entheses in the Hellenistic period. There was a substantial decline in their occurrence in the Roman period to 29.9% (152/509), and a further, smaller decline to 25.5% (109/428) in the late-Antique period. The difference between the Hellenistic and Roman periods was statistically significant (X^2=4.90, p=0.03), but between the Roman and late-Antique periods, there was no significant difference (X^2=2,24, p=0.13). The minor entheseal changes, which made up the majority of the observed lesions, followed the same pattern of decline over time, from 31.4% in the Hellenistic period, to 23.8% in the Roman period, to 19.2% in the late-Antique period. The prominent expressions of entheseal changes were most common in the Hellenistic period (10.5%) and were almost equal in their occurrence in the Roman (6.1%) and late-Antique (6.3%) periods.

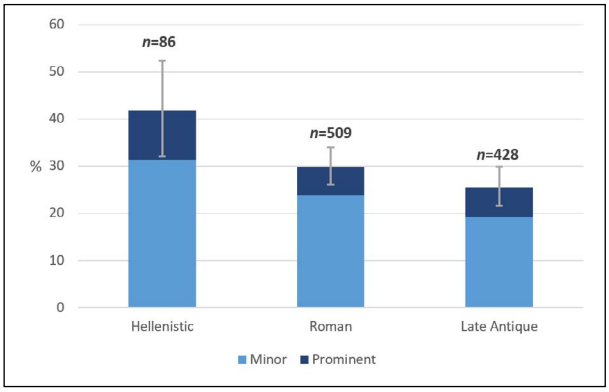


Figure 12.14. Prevalence of entheseal changes (minor and prominent) by time period with sample sizes (n) and 95% confidence interval error bars.

Interpretation of the combined activity analyses

The Hellenistic results indicate that a sizeable proportion of the population was engaged in manual labour, such as agricultural labour, construction work, transportation of heavy goods, or military activities. The Roman assemblage generally has a lower prevalence of activity or movement-related pathological conditions, which is likely to some extent to reflect the type of individual represented in the burial assemblage. The Roman assemblage is largely represented by individuals who were buried in ostentatious tombs and are likely to have been the higher status members of society. While it is unclear from the burial record what sort of subset or cross-section of society is represented by the Hellenistic assemblage, with the transition from a subsistence economy to a system more dependent on trade, it is possible that a smaller proportion of the population was engaged in manual labour, such as farm work, in the Roman period. It is also possible that these individuals had moved out of the urban areas to smaller settlements which were now feasible due to peaceful relations on the island (Hayden *et al.* 1992: 333; Sanders 1982: 30). It is known that there would have been a large workforce required for the many building projects

during the Roman period, which would have involved a great deal of physical labour, but it may be the case that such individuals, essentially the urban poor, are not represented in the skeletal assemblage under analysis.

The late-Antique period had a higher prevalence of osteoarthritis and IVDD than the Roman period. Entheseal change rates were slightly reduced, though this was not a statistically significant difference and, as with any condition with a multifactorial aetiology, it must be considered that other variables could be the more dominant factors in the expression of lesions. The difference in the manifestation of joint diseases and entheseal changes between the Roman and late-Antique periods appears to be less significant than the difference between the Hellenistic and Roman periods, and this is likely to be due to the more gradual socio-economic changes during the late-Roman period (Sweetman 2004b: 481). With fewer imports or exports known at or from Knossos in the late-Antique period, this may have meant a return to subsistence living, with more of the urban population engaged in manual labour. The increase in levels of joint disease and slight reduction in entheseal changes could be due to a certain level of increased activity across the entire assemblage without particularly heavy loading at the muscle attachment sites.

Conclusion

The results demonstrate that, in addition to the impacts on the official administration, cultural tastes, and urban fabric of the city, the effects of the broad-scale social, political and economic changes during these time periods filtered down into the everyday lives of people and affected their fundamental wellbeing and way of life. Some differences were subtle and others remain unexplained, but patterns across the various analyses demonstrate a significant change between the Hellenistic and Roman assemblages, including increased adult life expectancy, a diversification of diet, and the greater visibility of a non-labouring higher status class, potentially with some farmworkers and labourers moving away from the city or being buried farther out or in less clearly recognisable graves. These changes likely reflect the general increased connectivity of Knossos and other Cretan cities within Mediterranean networks and the peace and prosperity across the island, rather than being a direct result of Knossos becoming a Roman colony. However, to establish this clearly will require comparable analyses at contemporary cities in Crete.

The later transition into late antiquity is a more gradual socio-economic change, and this is also reflected in the less substantial differences in health and lifestyle indicators at Knossos. Christianity is attested textually at Knossos from the 2nd century (Eusebius, *Historia Ecclesiastica* iv.21 and 23.7), with the earliest known graves that were identified as being Christian dating to the later 3rd century and becoming visible monumentally with the construction of at least three basilica churches during the 5th and 6th centuries (Frend and Johnston 1962; Hayes 2001; Sweetman 2004a). Age-at-death profiles were remarkably similar to the Roman period. An increase in joint disease may reflect a change to a more subsistence level of living with fewer non-farming occupants, thus reflecting a less hierarchical society. This may represent the gradual disappearance of an elite class or simply the movement of high-status people away from Knossos to coastal Heraklion, which superseded Knossos as the major centre for north-central Crete from the late-Antique period until today. A smaller elite group of clergy or church patrons may have remained resident at Knossos, with at least two of the basilica churches overlapping in use in the 6th century. The relative conservatism in tomb form and monumentalisation of church buildings suggest changing attitudes towards priorities for social and capital investment. The increase in marine protein consumption in this period may reflect both less pressure on resources and the adoption of a Christian dietary regimen.

Acknowledgments

This research was funded by the London Arts and Humanities Partnership AHRC Studentship, the British School at Athens Studentship and an Onassis Foundation Fellowship. Thanks go to my supervisors Simon Hillson and Todd Whitelaw, to the British School at Athens for the permission to study the material and access to the archival records, to the Heraklion Ephoreia and Heraklion Museum for the permits for the stable isotope sampling, to Rhiannon Stevens and Hazel Reade for their supervision of the isotope sample preparation at the UCL Institute of Archaeology and to Anne-Lise Jourdan for running the samples in the mass spectrometer at the UCL BEIF Laboratory, and again to Todd Whitelaw for the provision of maps with the Knossos Urban Landscape Project (KULP) survey data.

Bibliography

Ambrose, S.H. and L. Norr. 1993. Experimental evidence for the relationship of the carbon isotope ratios of whole diet and dietary protein to those of bone collagen and carbonate, in J.B. Lambert and G. Grupe (eds) *Prehistoric Human Bone: Archaeology at the Molecular Level*: 1–37. Berlin and Heidelberg: Springer.

Armelagos, G.J. and D.P. Van Gerven. 2003. A century of skeletal biology and paleopathology: contrasts, contradictions, and conflicts. *American Anthropologist* 105: 53–64.

Bedwin, O. 1992. Appendix 1: the animal bones, in L.H. Sackett (ed.) *Knossos from Greek City to Roman Colony:*

Excavations at the Unexplored Mansion II (British School at Athens, Suppl. 21): 491–492. London: British School at Athens.

Bocherens, J. and D. Drucker. 2003. Trophic level isotopic enrichment of carbon and nitrogen in bone collagen: case studies from recent and ancient terrestrial ecosystems. *International Journal of Osteoarchaeology* 13.1–2: 46–53.

Bourbou, C. 2010. *Health and Disease in Byzantine Crete (7th–12th Centuries AD).* Farnham: Ashgate Publishing.

Brill, W.J. 1977. Biological nitrogen fixation, in N. Kretchmer and W. Robertson (eds) *Human Nutrition: Readings from Scientific American*: 18–27. San Francisco: W.H. Freeman and Company.

Buikstra, J.E. and L.A. Beck (eds) 2006. *Bioarchaeology: The Contextual Analysis of Human Remains*. Burlington: Elsevier Academic Press.

Capasso, L., K.A.R. Kennedy and C.A. Wilczack. 1999. *Atlas of Occupational Markers on Human Remains.* Teramo: Edigrafital S.p.A.

Chaniotis, A. 1999. Milking the mountains: economic activities on the Cretan uplands in the Classical and Hellenistic period, in A. Chaniotis (ed.) 1999. *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 181–220. Stuttgart: Franz Steiner Verlag.

DeNiro, M.J. and S. Epstein. 1978. Influence of diet on the distribution of carbon isotopes in animals. *Geochimica et Cosmochimica Acta* 42.5: 495–506.

Efstratiou, N., A. Karetsou, E.S. Banou and D. Margomenou. 2004. The Neolithic settlement of Knossos: new light on an old picture, in G. Cadogan, E. Hatzaki and A. Vasilakis (eds) *Knossos, City, State: Proceedings of the Conference in Herakleion organised by the British School at Athens and the 23rd Ephoreia of Prehistoric and Classical Antiquities of Herakleion, in November 2000, for the Centenary of Sit Arthur Evans's Excavations at Knossos* (British School at Athens Studies 12): 39–49. London: British School at Athens.

Eiring, L.J. 2001. Hellenistic Knossos: the pottery. Unpublished PhD dissertation, University of Sydney.

Francis, J.E. 2016. Apiculture in Roman Crete, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 83–100. Oxford: Oxbow Books.

Frend, W.H.C. and D.E. Johnston. 1962. The Byzantine basilica church at Knossos. *Annual of the British School at Athens* 57: 186–238.

Gagarin, M. and P.J. Perlman. 2016. *The Laws of Ancient Crete c. 650–400 BCE.* Oxford: Oxford University Press.

Gallimore, S. 2015. *An Island Economy: Hellenistic and Roman Pottery from Hierapytna, Crete* (Lang Classical Studies 18). New York: Peter Lang.

Hayden, B.J., J.A. Moody and O. Rackham. 1992. The Vrokastro Survey Project, 1986–1989: research design and preliminary results. *Hesperia* 61.3: 293–353.

Hayes, J.W. 2001. Early Christian pottery from Knossos: the 1978–1981 finds from the Knossos Medical Faculty Site. *Annual of the British School at Athens* 96: 431–454.

Hershkovita, I., L. Bedford, L.M. Jellema and B. Latimer. 1996. Injuries to the skeleton due to prolonged activity in hand-to-hand combat. *International Journal of Osteoarchaeology* 6.2: 167–178.

Hillson, S.W. 2001. Recording dental caries in archaeological human remains. *International Journal of Osteoarchaeology* 11.4: 249–289.

Hillson, S.W. 2008a. Dental pathology, in M.A. Katzenberg and S.R. Saunders (eds) *Biological Anthropology of the Human Skeleton*: 301–340. Hoboken: John Wiley and Sons.

Hillson, S.W. 2008b. The current state of dental decay, in J.D. Irish and G.C. Nelson (eds) *Technique and Application in Dental Anthropology:* 111–135. Cambridge: Cambridge University Press.

Homann-Wedeking, B. 1950. A kiln site at Knossos. *Annual of the British School at Athens* 45: 165–192.

Hood, M.S.F. and D. Smyth. 1981. *Archaeological Survey of the Knossos Area* (British School at Athens, Suppl. 14). London: British School at Athens.

Isaakidou, V., A. Styring, P. Halstead, E. Nitsch, E. Stroud, P. le Roux, J. Lee-Thorp and A. Bogaard. 2019. From texts to teeth: a multi-isotope study of sheep and goat herding practices in the late Bronze Age ('Mycenaean') polity of Knossos, Crete. *Journal of Archaeological Science* 23: 36–56.

Jurmain, R. 1977. Stress and the etiology of osteoarthritis. *American Journal of Physical Anthropology* 46.2: 353–365.

Jurmain, R. 1980. The pattern of involvement of appendicular degenerative joint disease. *American Journal of Physical Anthropology* 53.1: 143–150.

Katzenberg, M.A. 2008. Stable isotope analysis: a tool for studying past diet, demography, and life history, in M.A. Hrazenberg and S.R. Saunders (eds) *Biological Anthropology of the Human Skeleton*: 413–442. Hoboken: John Wiley and Sons.

Lagia, A., A. Papathanasiou and S. Triantaphyllou. 2014. The state of approaches to archaeological human remains, in B. O'Donnabhain and M.C. Lozada (eds) *Archaeological Human Remains: Global Perspectives*: 105–126. Heidelberg: Springer.

Larsen, C.S. 2015. *Bioarchaeology: Interpreting Behavior from the Human Skeleton*, 2nd ed. Cambridge: Cambridge University Press.

Larsen, C.S. 2018. Bioarchaeology in perspective: from classifications of the dead to conditions of the living. *American Journal of Physical Anthropology* 165.4: 865–878.

Larsen, C.S., J. Craig, L.E. Sering, M.J. Schoeninger, K.F. Russell, D.L. Hutchinson and M.A. Williamson. 1995. Cross homestead: life and death on the midwestern frontier, in A.L. Grauer (ed.) *Bodies of Evidence:*

Reconstructing History through Skeletal Analysis: 139–159. New York: Wiley-Liss.

Livarda, A. and G. Kotzamani. 2013. The archaeobotany of Neolithic and Bronze Age Crete: synthesis and prospects. *Annual of the British School at Athens* 108: 1–29.

Lubell, D., M. Jackes, H. Schwarcz, M. Knyf and C. Meiklejohn. 1994. The Mesolithic-Neolithic transition in Portugal: isotopic and dental evidence of diet. *Journal of Archaeological Science* 21.2: 201–216.

Marangou, A. 1999. Wine in the Cretan economy, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien 29): 269–278. Stuttgart: Franz Steiner Verlag.

Marshall, I.H. and P. Towner. 1999. *A Critical and Exegetical Commentary on the Pastoral Epistles*. Edinburgh: T and T Clark.

Merbs, C.F. 1983. *Patterns of Activity-Induced Pathology in a Canadian Inuit Population*. Ottawa: National Museums of Canada.

Moody, J. 2014. Prehistoric and historic climate and weather in (east) Crete, in B.P.C. Molloy and C.N. Duckworth (eds) *A Cretan Landscape through Time: Priniatikos Pyrgos and Environs* (British Archaeological Reports International Series 2634): 23–30. Oxford: Archaeopress.

Moody, J. 2016. The Roman climate: was it really different?, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 59–82. Oxford: Oxbow Books.

Nafplioti, A. 2016. Eating in prosperity: first stable isotope evidence of diet from Palatial Knossos. *Journal of Archaeological Science: Reports* 6: 45–52.

Nitsch, E.K., G. Jones, A. Sarpaki, M. Hald and A.M. Bogaard. 2019. Farming practice and land management at Knossos, Crete: new insights from Δ13C and Δ15N analysis of Neolithic and Bronze Age crop remains, in D. Garcia, R. Orgeolet, M. Pomadere and J. Zurbach (eds) *Country in the City: Agricultural Functions of Protohistoric Urban Settlements (Aegean and Western Mediterranean)*: 159–174. Oxford: Archaeopress.

Peña, J.T. 2007. *Roman Pottery in the Archaeological Record*. Cambridge: Cambridge University Press.

Roberts, C., C. Bourbou, A. Lagia, S. Triantaphyllou and A. Tsaliki. 2005. Health and disease in Greece: past, present and future, in H. King (ed.) *Health in Antiquity*: 32–57. New York: Routledge.

Sanders, I.F. 1982. *Roman Crete. An Archaeological Survey and Gazetteer of Late Hellenistic, Roman, and Early Byzantine Crete*. Warminster: Aris and Philips.

Schoeninger, M.J. and M.J. DeNiro. 1984. Nitrogen and carbon isotopic composition of bone collagen from marine and terrestrial animals. *Geochimica et Cosmochimica Acta* 48.4: 625–639.

Sweetman, R.J. 2004a. Late Antique Knossos. Understanding the city: evidence of mosaics and religious architecture. *Annual of the British School at Athens* 99: 315–354.

Sweetman, R.J. 2004b. The changing nature of Knossos: Roman to late Antique — some problems, in G. Cadogan, E. Hatzaki and A. Vasilakis (eds) *Knossos, City, State: Proceedings of the Conference in Herakleion organised by the British School at Athens and the 23rd Ephoreia of Prehistoric and Classical Antiquities of Herakleion, in November 2000, for the Centenary of Sir Arthur Evans's Excavations at Knossos* (British School at Athens Studies 12): 481–488. London, British School at Athens.

Sweetman, R.J. and M.J. Becker. 2005. Knossos medical faculty site: late Antique graves and other remains. *Annual of the British School at Athens* 100: 331–386.

Temple, D.H. 2015. Caries: the ancient scourge, in J.D. Irish and G.R. Scott (eds) *A Companial to Dental Anthropology*: 433–449. Hoboken: John Wiley and Sons.

Trainor, C. 2019. Polis, colony and beyond: urban Knossos from Archaic to late Antique times, in G. Sifakis and A. Kalokairinos (eds) *Πεπραγμένα του ΙΒ΄ Διεθνούς Κρητολογικού Συνεδρίου (Ηράκλειο, 21-25 Σεπτεμβρίου 2016)*, Vol. A1: online: <https://12iccs.proceedings.gr/en/proceedings/category/39/35/814>

van der Merwe, N.J. 1982. Carbon isotopes, photosynthesis, and archaeology: different pathways of photosynthesis cause characteristic changes in carbon isotope ratios that make possible the study of Prehistoric human diets. *American Scientist* 70.6: 596–606.

van der Merwe, N.J. and J.C. Vogel. 1978. 13C content of human collagen as a measure of Prehistoric diet in woodland North America. *Nature* 276.5690: 815–816.

Waldron, T. 2009. *Palaeopathology.* Cambridge: Cambridge University Press.

Walker, P.L. and S.E. Hollimon. 1989. Changes in osteoarthritis associated with the development of a maritime economy among southern California Indians. *International Journal of Anthropology* 4.3: 171–183.

Whitelaw, T., M. Bredaki and A. Vasilakis. 2019. The long-term dynamics of Knossos in context, G. Sifakis and A. Kalokairinos (eds) *Πεπραγμένα του ΙΒ΄ Διεθνούς Κρητολογικού Συνεδρίου (Ηράκλειο, 21-25 Σεπτεμβρίου 2016)*, Vol. A1: online: <https://12iccs.proceedings.gr/en/proceedings/category/39/35/816>

13.

Hazard, Risk, Vulnerability and the AD 365 Earthquake on Crete

Scott Gallimore

Introduction

Residues of disasters are readily identifiable in the archaeological record, with these events often interpreted as the cause of significant transformation. Archaeological investigations into disasters, however, have followed different trajectories than other social science fields, such as anthropology, geography, sociology, and psychology. As Shannon Lee Dawdy (2006: 720) observes, 'archaeologists tend to view disasters in terms of punctuated equilibrium. Thus, disasters for them are extraordinary events representing the end of a culture or the beginning of a new one.' The social science fields mentioned above, which focus on modern disasters, emphasize the dynamic, social construction of these events, often defined within the context of hazard (natural propensity for disaster), vulnerability (factors impacting preparedness and response to a disaster), and risk (a predictive model of negative outcomes based on the combination of hazard with identified vulnerabilities) (e.g. Oliver-Smith and Hoffman 1999; Solberg *et al.* 2010; Tierney 1999; Tierney and Oliver-Smith 2012; Wisner *et al.* 2004). Analysis of ancient disasters through the lens of these concepts can complement traditional perspectives that use evidence for destruction in the archaeological record as a catalyst for studying the structure of communities and societies before as well as after (Driessen 2013: 12). It can also provide a more refined picture of ancient response and resilience to a disaster, a picture that contextualizes the degree of material and social recovery and transformation evident in succeeding stratigraphic layers.

As a contribution to the study of change and transition on Crete between the late-Hellenistic and early Byzantine periods, this paper aims to provide a critical assessment of the AD 365 earthquake, one of the largest seismic episodes ever documented for the Mediterranean, through the perspective of hazard, vulnerability, and risk. This quake caused island-wide destruction and triggered a tsunami that struck shorelines across the central and eastern Mediterranean. Assessment of the hazard, vulnerability, and risk for late-Roman Crete with respect to earthquakes and tsunamis, in addition to considering resilience even in the face of significant destruction, can offer an improved understanding of the island prior to this destructive event that can, in turn, shed light on its transformative potential for Cretan society.

Hazard, risk, and vulnerability

Research into hazard, vulnerability, and risk provides a means of evaluating impacts to material culture and social systems as a result of a disaster. As a starting point, we can define a hazard as a natural catastrophic event that can affect locations separately or in combination (Wisner *et al.* 2004: 49). For a particular region, assessing potential hazards requires more than just noting the probability that an earthquake, volcanic eruption, flood, hurricane, tornado, tsunami, or other disaster can occur. Frequency and magnitude of the hazard in question should also be considered. While many regions are prone to earthquakes, for example, the maximum potential magnitude will vary, as will the rate of recurrence. These variables are significant since they can impact a society's perception of risk and its motivation to address any identified vulnerabilities, thus affecting predictive models and disaster preparedness.

After identification of a particular hazard or hazards, the vulnerability of any populations living within the potential impact zone must be assessed. This involves defining 'the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard' (Wisner *et al.* 2004: 11). In other words, vulnerability focuses on the potential for negative consequences from a disaster based on evaluation of the traits of a particular society. Demographic, economic, and political processes affect vulnerability, along with variables like class, ethnicity, age, religion, gender, disability and health, immigration status, and environment (Smith 2013: 61–69; Wisner *et al.* 2004: 11, 52). Timing is also an important consideration. For earthquakes and tsunamis, occurrence at night or

during holidays can lead to more devastating impacts. Vulnerability analysis for earthquakes and tsunamis should, in addition, evaluate the construction style and spacing of buildings, population density, land use, physical and natural barriers, and regional geology and topography (Papathoma *et al.* 2003: 380–381; Sarris *et al.* 2010: 395). One difficulty for archaeology, however, is the lack of data comparable to that available for modern disasters. Some or most of the above variables in antiquity will be unknowable. One option is to supplement critical appraisal of existing evidence with comparative study of other ancient disasters along with more modern events to attempt to overcome this difficulty and to reveal likely vulnerabilities.

Risk is the combination of a hazard with identified vulnerabilities as a means of predicting what might happen during a disaster and how people will respond (Wisner *et al.* 2004: 49). One method that has been used to define this relationship is the so-called Swiss Cheese model of disaster (**Figure 13.1**). It relies on the premise that groups will establish barriers to prevent adverse effects, but that each level has holes (i.e., vulnerabilities) (Smith 2013: 51). The more that these holes/vulnerabilities overlap in a location where one or more hazards is present, the higher the level of risk, should a disaster occur. While assessment of vulnerability considers the potential of negative consequences, risk is concerned with calculating the probability that those consequences will actually happen. For modern studies of disasters, identification of risk provides an opportunity to develop mitigation strategies. In an archaeological context, analysis of risk offers a method for interpreting evidence for destruction, recovery, resilience, and transformation. Risk will not be uniform for a specific region or population and can range from low to moderate to high even within a confined area.

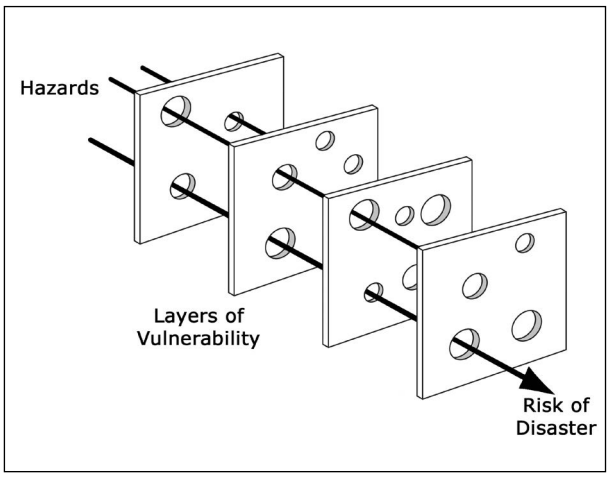


Figure 13.1. The Swiss Cheese model of disaster (adapted from a graphic by Doverofttke, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, from Wikimedia Commons).

Hazard, vulnerability, and risk can provide a framework for better assessing the structure of societies prior to disasters and their capacity for recovery and achieving a 'new normal' (see Tierney and Oliver-Smith 2012: 127). This three-fold model is a natural fit for archaeology because it requires empirical research (Hewitt 1995: 331) in combination with an understanding of the intersection of social systems, natural systems, and the built environment (Oliver-Smith 2013: 277). Sensitivity to these concepts also encourages a focus on agency within the context of disasters. If vulnerabilities are identified, for instance, this can imply a degree of passivity on behalf of a population (Hewitt 1995: 325), thus demonstrating the importance of employing clear definitions and assessing voluntary and involuntary activities associated with vulnerability and risk.

We must also consider that populations can demonstrate remarkable resistance to the adverse consequences of a disaster and that this type of event should not be viewed as a cause of transformation *a priori*. The structure of a society after a catastrophe occurs must be evaluated critically to identify if any change is evident. One perspective for exploring potential change and transition following a disaster is resilience theory (e.g., Redman 2005; Weiberg 2012). This theory, which developed within the field of ecology, '...seeks to understand the source and role of change–particularly the kinds of change that are transforming–in systems that are adaptive' (Redman 2005: 72). Stability and transformation are both featured within this model, along with the observation that complex systems are regularly moving between the two. Resilience is '... the amount of disturbance that a stable system can withstand before being disrupted and moving toward a new equilibrium' (Semerari 2017: 546). Thus, it complements a hazard-based approach for evaluating disasters by providing a method for critiquing the aftermath. For the AD 365 earthquake and tsunami, resilience theory could provide a foundation for assessing the extent to which the event was the direct cause of transformation evident from the late-4th century onward, one of several stimuli driving that change, or a distraction that prevents consideration of other underlying factors. The discussion now turns to a detailed study of that event to assess the applicability of employing the above concepts and definitions.

Crete and the AD 365 earthquake

The island of Crete lies in the most seismically active part of Europe, sitting atop the Hellenic subduction zone where the African continental plate slides beneath the Anatolian-Aegean plate (Becker *et al.* 2010: 370). While earthquakes have plagued Crete throughout its history, the largest one on record dates to July 21, AD 365 with a calculated magnitude of at least 8.5 (Stiros 2010: 59–61).

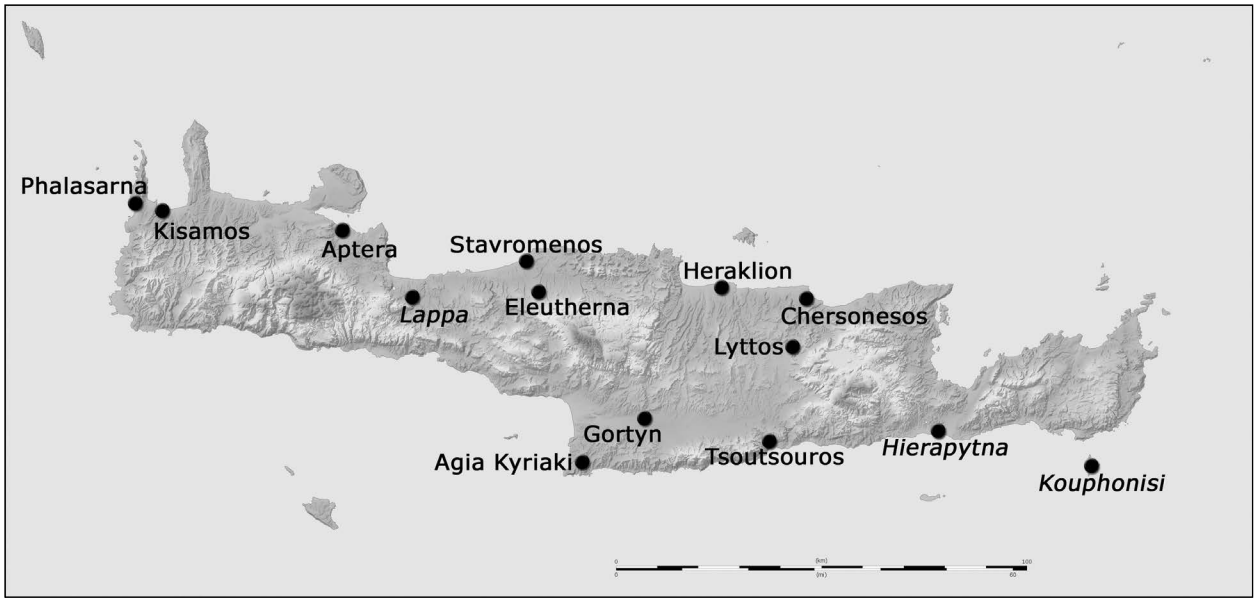


Figure 13.2. Map of sites affected by the AD 365 earthquake on Crete, CC BY-SA 3.0 (map by Eric Gaba, courtesy of Creative Commons <https://creativecommons.org/licenses/by-sa/3.0>, from Wikimedia Commons).

It struck shortly after first light, according to the 4th century historian Ammianus Marcellinus (26.10.15), with an epicenter to the southwest of Crete in an area known as the Hellenic Trench. That trench, which lies 25km from Crete, runs northwest–southeast within the Hellenic subduction zone, where a fault line has been documented (Shaw *et al.* 2008: 269). One consequence of this earthquake was uplift within the western half of Crete that may have reached 9m in the southwestern part of the island (Stiros 2010: 56–57). Some studies argue for less uplift, ranging from approximately 2.5m (Ganas and Parsons 2009: 11) to 5.5–6.5m (Caputo *et al.* 2010: 120), while another suggests much of the uplift should be dated one to two centuries after AD 365 (Price *et al.* 2002). This earthquake also generated a large tsunami, evidence for which has been identified in sediments as far away as Egypt (Hamouda 2009), northwest Greece (Vött *et al.* 2009: 29), and eastern Sicily (De Martini *et al.* 2010: 54; Gerardi *et al.* 2012: 1195). Substantiation that the tsunami struck Crete's shores had been lacking (Scheffers and Scheffers 2007: 623) but has now been confirmed at the sites of Sougia and Palaiochora along the southwestern coast of the island (Werner *et al.* 2018).

There are currently eleven sites on Crete with destruction deposits associated with the AD 365 earthquake, listed here moving from west to east (**Figure 13.2**): Phalasarna (Francis 2010: 266–267); Kissamos (Stiros and Papageorgiou 2001: 388); Aptera (Niniou-Kindeli and Christodoulakos 2004: 319); Stavromenos (Whitley *et al.* 2006–2007: 114); Eleutherna (Yangaki 2005: 43–62); Agia Kyriaki (Blackman and Branigan 1977: 73–74); Gortyn (Di Vita 1995: 971); Heraklion (Tomlinson 1995–1996: 39); Tsoutsouros (Whitley 2003–2004: 80); Lyttos (French 1992–1993: 72); and Chersonissos (Chaniotaki-Starida and Mari 2004: 290–291). Three additional sites, Lappa (Tomlinson 1994–1995: 71), Hierapytna (Gallimore 2015: 304), and Kouphonisi (Catling 1983–1984: 67) have evidence for destruction during the second half of the 4th century perhaps related to this earthquake. An assessment of the hazard, vulnerabilities, and risk associated with this event, in addition to a critical appraisal of evidence for destruction and the resilience of Cretan populations, will provide an improved foundation for understanding its consequences.

Hazard

Crete has a higher cumulative frequency of earthquakes than other parts of the Hellenic subduction zone; cumulative frequency is a statistical calculation that shows the relationship between the frequency and magnitude of earthquakes in particular regions at particular times (Hatzidimitriou *et al.* 1985: 141–142). Recorded data for earthquakes becomes less reliable moving back in time, but assessment of documented seismic events in Greece with magnitudes ≥ 6.5 (1801–1981), ≥ 5.2 (1911–1981), and ≥ 5.0 (1950–1981) assign the highest cumulative frequency to the area around Crete (Hatzidimitriou *et al.* 1985: 143–144). A 12-month study from July 2003–June 2004 recorded over 2500 earthquakes with magnitudes up to 4.5 on Crete and surrounding islands (Becker *et al.* 2010). Knowledge of ancient earthquakes on Crete tends to be confined to significant events that are well documented in the historical and archaeological records (e.g., Di Vita 1986; Guidoboni *et al.* 1994: 193–194, 267–274, 285–286, 372–373), but cumulative frequencies were likely high in earlier periods as well.

The earthquake of AD 365 is distinct, however, for being the largest seismic event ever recorded in the Mediterranean basin, which made preparedness unlikely. Very large, tsunami-inducing earthquakes are possible for the Hellenic subduction zone but are rare. They occur in the area of the Hellenic Trench and its associated fault line (Shaw *et al.* 2008: 269). Accumulated stress along this fault requires significant amounts of time to reach levels capable of producing ≥ 8.0 magnitude earthquakes. One assessment, based on analysis of uplift in western Crete contemporary with the AD 365 event, suggests that an earthquake of this magnitude on the island can occur once every 4500–5000 years (Shaw *et al.* 2008: 275). Another study calculates the frequency at once every 12,000 years (Caputo *et al.* 2010: 123). In either scenario, contemporary populations lacked a living memory of an earthquake of that magnitude and thus had no way of foreseeing its potential consequences.

Tsunami hazard for Crete must also be considered, since this was a consequence of the AD 365 event. Caused predominately by earthquakes, tsunamis are a more severe hazard for the eastern rather than western Mediterranean due to the active seismicity of the Hellenic Trench (Sørensen *et al.* 2012: 7, 11; Tinti *et al.* 2005: 172). Small to moderate tsunamis can be expected every few years. A calculation using historical data and geological conditions, for instance, approximates that tsunamis with wave amplitudes of +5m can occur every 26 years (Papathoma *et al.* 2003: 379). Tsunamis with wave amplitudes greater than +10m, on the other hand, such as those caused by the AD 365 earthquake or the volcanic eruption of Thera in the Late Bronze Age, can have intervals of centuries between them (Papadopoulos *et al.* 2010: 170).

In the case of Crete, tsunamis produced in the eastern Mediterranean reach the island quickly. The tsunami generated by the Thera eruption struck within 13 minutes, based on computer modeling, while the AD 365 tsunami impacted the entire west and south coast within 15 minutes of generation (Novikova *et al.* 2011: 671; Tinti *et al.* 2005: 182). Tsunami hazard, however, is not uniform for the entire coast. For the tsunami resulting from the Thera eruption, wave amplitude across Crete's north coast has been calculated to have ranged between insignificant and +28m as a result of the varying thickness of pyroclastic flows entering the sea along Thera's south coast (Novikova *et al.* 2011: 677). Some of those flows may have been up to 55m in thickness, while others were only 1m. The former was capable of generating much stronger wave action. A modern tsunami hazard assessment using the Cretan capital of Heraklion as a case study also concludes that risk is variable within a specific area, depending on factors like distance from the coast, building construction, and the ability for populations to move away from the flood zone (Papathoma *et al.* 2003: 378). As with earthquakes of strong magnitude, tsunamis are a clear hazard for Crete, but more careful assessment of particular variables is required to determine probability of destruction for given regions.

Vulnerability

To assess seismic and tsunami vulnerability for Crete in the mid-4th century AD, I evaluate a number of factors, including topography, geography, and land use, the built environment, harbour infrastructure, population density, political structures, religion, and cultural variables (**Table 13.1**).

Topography, geography, and land use

Crete boasts a diverse topography that ranges from coastal plains to high mountains and includes more upland plains than any other region of the Mediterranean (Rackham and Moody 1996: 12–32). In many areas, transition in elevation can be abrupt. Along south-central Crete, for instance, the Asterousia mountain range, with its highest peak at 1231m, provides a barrier between the Mesara Plain and the coast of the Libyan Sea (Allbaugh 1953: 42). This diversity, historically, resulted in numerous micro-regions that were often self-governed and self-sufficient. This suggests that there was potential for increased independence in the face of disaster should the centralized Roman government be unable to provide aid (for more discussion, see the section on political structures below).

Various types of vegetation — shrubs, undershrubs (woody plants that cannot grow into trees), and herbaceous plants — are characteristic of the majority of the island (Rackham and Moody 1996: 111). Crete is also unique for having more endemic plants than any other island in Europe (Rackham and Moody 1996: 54). As on the island today, the primary cultivated crops in antiquity comprised the so-called Mediterranean triad: grain, olives, and grapes. Legumes were also likely an important part of the diet (Allbaugh 1953: 18). Modern proxy data can shed additional light on ancient dietary habits. Ethnographic work during the Galatas survey project in the Pediada plain of central Crete revealed that modern populations consume wild plants on a regular basis, even when other foodstuffs are readily available (Watrous *et al.* 2017: 21), indicative of a well-established strategy based around diversity of diet to prevent over-reliance on one or two primary food sources.

Access to water is an issue for populations on Crete, particularly during the summer when rainfall is limited across many parts of the island (Allbaugh 1953: 15). Under Roman rule, an infrastructure of aqueducts was

<table>
<tr><th>Vulnerability Level</th><th>Topography, Geography, Land Use</th><th colspan="3">Built Environment</th><th>Harbor Infrastructure</th><th>Population Density</th><th>Political Structures</th><th>Religion</th><th>Cultural Variables</th></tr>
<tr><td>Low</td><td>Supplement diet through collection of wild foodstuffs</td><td colspan="3"></td><td>Province-wide koinon</td><td>Resource-poor hinterlands</td><td>Polis-level governance
Province-wide koinon</td><td>Spread of Christianity prior to A.D. 365</td><td>Presence of social networks</td></tr>
<tr><td rowspan="4">Moderate</td><td>Reliance on cultivated crops</td><td colspan="3">Construction using concrete</td><td rowspan="3">Artificial constructions with piers, moles, and breakwaters</td><td>Inland urban centers with low population densities</td><td>Centralized provincial government</td><td rowspan="3">Disaster as one of several possible stimuli promoting conversion to Christianity (?)</td><td rowspan="3">Male population</td></tr>
<tr><td rowspan="3">Occupation of upland areas with better water access</td><td colspan="3">Low to moderate density of structures</td><td rowspan="2">Resource-rich hinterlands</td><td rowspan="2">Centralized Imperial government</td></tr>
<tr><td colspan="3">Construction on bedrock</td></tr>
<tr><td>Single-story buildings
(seismic)</td><td colspan="2">Multi-story buildings
(tsunami)</td></tr>
<tr><td rowspan="5">High</td><td>Reliance on aqueducts</td><td colspan="3">Construction using stone, wood, or mudbrick</td><td rowspan="5">Natural anchorages</td><td>Coastal urban centers</td><td rowspan="5">Separation of Crete from Cyrenaica</td><td rowspan="5">Disaster as direct stimulus leading to conversion to Christianity (?)</td><td>Presence of itinerant populations (i.e. sailors)</td></tr>
<tr><td>Reliance on water sources near the coast</td><td colspan="3">High density of structures</td><td rowspan="4">Inland urban centers with high population densities</td><td>Significant economic inequality</td></tr>
<tr><td rowspan="3">Occurrence of disaster during the summer</td><td colspan="3">Construction along the coast</td><td>Children and elderly members of a population</td></tr>
<tr><td colspan="3">Construction on slopes</td><td rowspan="2">Female population</td></tr>
<tr><td colspan="2">Single-story buildings
(tsunami)</td><td>Multi-story buildings
(seismic)</td></tr>
</table>

Table 13.1. Summary of Crete's vulnerability level to a high-magnitude earthquake and resulting tsunami in AD 365.

developed (Kelly 2006), which was beneficial so long as they did not suffer any damage. Jennifer Moody (2016: 67) has suggested that landscapes on Crete were subject to increasing desiccation from the mid-3rd century AD onwards due to changing climate conditions. This may have contributed to the apparent population increases in upland areas documented by survey archaeology, as individuals sought out environments with better access to water (Moody 2016: 77).

Built environment

From the perspective of seismic and tsunami vulnerability, variables to consider for the built environment can include style of construction, number of stories, density of structures, and the topography on which buildings are situated. These factors are difficult to discern for sites on Roman Crete, since even research on the most thoroughly excavated Roman site on the island, Gortyn, has revealed only a limited area, with focus primarily on the public sector of the city. While public buildings and large private residences may have displayed some seismic resistance owing to Roman-style construction with concrete (see Harries 1996), older, less elastic, stone-built structures and smaller residences were more vulnerable. Evidence from more recent earthquakes corroborates this assertion. A large quake recorded for August 8, 1303 reportedly destroyed all of the houses in Heraklion, then called Candia, and damaged several public buildings (Guidoboni and Comastri 1997: 63). The houses were primarily of stone construction (Wagstaff 1965: 63). More recently, at Chania in northwestern Crete, an earthquake on January 9, 2006 damaged 44 residences, most of which were stone-built (Sarris *et al*. 2010: 401–402).

Building height presents a useful variable for vulnerability, particularly in coastal settlements. A multi-story structure can lower vulnerability to a tsunami because it provides a chance for 'vertical evacuation' (Papathoma *et al.* 2003: 380). Anything above a single floor is beneficial in this context. Multiples stories, however, can increase vulnerability to earthquakes. Taller structures dissipate energy from seismic waves more slowly, have greater potential to shake against each other, and are more prone to twisting and other types of motion during a quake (Smith 2013: 156). The weakest part of a building is often the connection between the walls and the ceiling, a factor that is exaggerated when there are several floors. A recent study of seismic vulnerability for modern Chania found that the majority of buildings had one or two floors, with only a small number surpassing that (Sarris *et al*. 2010: 405, fig. 7). For Roman Crete, we lack sufficient evidence to conclude if construction followed a similar pattern, although Anna Kouremenos observes that upper stories have been identified for the House of Phidias at Kissamos and the Villa Dionysos at Knossos and have been hypothesized for other structures at Knossos and at Eleutherna (Kouremenos 2013: 26, 90, 144). She also notes that most Roman houses possessed at least one upper story and there is little reason to believe Crete strayed from that norm.

For both earthquake and tsunami vulnerability, a higher density of structures is problematic. Buildings in close proximity are more likely to pound against each other during an earthquake and may collide if they collapse as a result of seismic wave action or a tsunami (Smith 2013: 156). This can lead to additional adverse effects, such as the blockage of evacuation routes (Papathoma 2003: 380–381). It may also facilitate the spread of fire, which was a common consequence of earthquakes for ancient populations that relied on lighting methods like oil lamps (Nur 2008: 139).

The study of seismic vulnerability for Chania described above provides important proxy data for considering the location of buildings in antiquity (Sarris *et al*. 2010: 398–399). That assessment demonstrated that structures located in coastal zones and along slopes were the most susceptible to earthquake damage. The coast was characterized by a concentration of older buildings constructed on loose deposits of clay, sand, and gravel, which are susceptible to seismic-related consequences like liquefaction. Construction along the coast would also be more vulnerable to tsunamis. Slopes, on the other hand, can 'lead to intense amplification of seismic ground motion', making them problematic locations for built structures (Sarris *et al*. 2010: 399). Chania, like most Cretan sites, has a variable topography that extends to approximately 217m above sea level. There are several areas of higher vulnerability scattered throughout the city. For Roman-period sites, vulnerability was most severe for structures located on coastal plains, slopes, and areas comprised of loose sediments. This suggests that even inland sites, such as Lyttos, located on the slopes at the eastern end of the upland Pediada plain, had sections with higher seismic vulnerability.

Harbour infrastructure

As an island, Crete relied on its numerous harbours for maintaining economic, political, and social connectivity with the rest of the Roman Empire. Much of Crete's prosperity under Roman rule was dependent on these harbours, and the position of the island made it a critical nexus between Europe, North Africa, and the Near East. From the late-Hellenistic period onward, Cretan harbours appear to have been important hubs for the transhipment of goods across the Mediterranean and, at least from the mid-1st century AD, for the export of Cretan products, including wine packaged in amphorae

and medicinal plants (Gallimore 2015: 269–274, 286–295; Curtis in this volume; Kouremenos in this volume). While evidence for these activities on Crete during the mid-4th century is not as robust as for earlier and later periods, perhaps suggesting that the island was facing an economic decline at this time (Gallimore 2016: 178–180), this is a problematic period to study across the Roman world, and limited data could be a factor of visibility in the archaeological record rather than an indication of actual phenomena (e.g., Pettegrew 2010).

Harbours on Crete varied in composition across the island. John Leonard (1995: 184–193) notes that ancient sources, including Strabo and the *Stadiasmus*, employ the following terms for harbours on Crete: *epineion*, *emporion*, *limen*, *hormos*, and *hyphormos*. For the island, both *epineion* and *emporion* appear to refer to sites that were economically dependent on large, inland centers. Strabo (10.4.11), when describing harbours along the south-central coast that were tied to the capital city of Gortyn, describes Matala as an *epineion* and Lebena as an *emporion*. *Epineion* refers exclusively to harbours while *emporion* can have a broader range of meanings, including designating a market or a warehouse. Neither term is specific about the type of harbour construction since they are used to describe small and large harbours alike. A *limen* refers to an important harbour, often of artificial construction; for example, Chersonissos, located along the north-central coast of Crete (*Stadiasmus* 349). Explorations of that site have documented breakwaters, three moles, and quays (Leatham and Hood 1958–1959: 267–269). *Hormoi* are small to medium-size harbours, either natural or artificial, and often circular in shape. Hierapytna in southeast Crete is described as a *hormos* in the *Stadiasmus* (336), which is corroborated by standing remains and archaeological investigations (Mourtzas and Kolaiti 2017; Spratt 1865: 254–255). According to the *Stadiasmus* (350), Olous in northeastern Crete is an example of a *hyphormos*, a small, natural anchorage like a cove. This may be representative of the majority of Crete's harbours.

Larger artificial harbours like Chersonissos and Hierapytna were less vulnerable to tsunami damage owing to the piers, moles, and breakwaters they had in place. A tsunami of sufficient strength, however, could easily overwhelm those structures. In AD 115, a large tsunami struck Caesarea Maritima in Israel, damaging the concrete moles to the extent that the wave breached the harbour and affected buildings along the shoreline (Reinhardt *et al.* 2006). This issue would be exacerbated if breakwaters and moles were damaged in an earthquake preceding a tsunami, as may have been the case in AD 365. For the smaller anchorages, there was little protection from a tsunami. Natural barriers like peninsulas and inlets are effective for mitigating normal wave action, and the substantial energy generated by tsunamis enables them to wrap around obstacles and strike shorelines from different directions. Such was the case at the site of Pseira, located on a small island a few kilometers off the northeast coast of Crete, as a result of the tsunami generated by the late-Bronze Age eruption of Thera (Betancourt 2009: 103–104). While the site, which is situated within an islet on the southeastern part of the small island, is well-shielded, computer modeling shows that the tsunami, which arrived from the north, wrapped around the island and struck the site from the south.

Harbour vulnerability is one of the most significant variables to consider for Crete prior to the AD 365 earthquake. Damage to any of the harbours, and in particular the large artificial ports, had the potential to cripple the economic viability of the island, possibly for a prolonged period of time. That was an important consequence in AD 1303, when Crete was devastated by an earthquake and tsunami (Guidoboni and Comastri 1997: 69). Most of the island's harbours were damaged or destroyed at that time, thus contributing to impoverished conditions that lasted for nearly two decades. During the Roman period, Crete relied on its harbour infrastructure, including coastal installations such as warehouses, due to its prominent position as an important node along north-south and east-west trade routes.

Population density

Population density can be difficult to evaluate for classical antiquity due to inadequate data that are rarely comparable across regions. Estimates ranging from 100 to 400 people per hectare are common for urban centers, even if the reliability of those figures is questionable (Wilson 2011: 171). Very little research into population density on Roman Crete has been undertaken, but a recent study of the population of the Sphakia region in southwest Crete by Simon Price (2011) provides some insight. Price combined data for the area of settlements calculated from an archaeological survey carried out from 1987–1990 (see Nixon *et al.* 2000) with detailed census records from the 17th through 19th centuries (Price 2011: 21–30). Analyzing these two datasets enabled him to calculate a ratio of 50–60 people per hectare during the early Modern period. This is a significantly lower estimate than many scholars have suggested for other regions of Greece and the Mediterranean as a whole. As Price argues, this could be due to uncritical assessment of the evidence behind those estimates or it could be an indication of Sphakia being a resource-poor region that historically supported a lower population, including during the Roman period. This could indicate that Sphakia's vulnerability to earthquakes and tsunamis

was lower than other resource-rich regions of Crete the Mesara Plain and the territories of larger city-states like Hierapytna, Knossos, and Kydonia (modern Chania), at least from the perspective of population density.

Some additional work has been done to develop a plausible population density ratio for larger urban centers that could be applicable to Crete. Andrew Wilson (2011: 172–174), using the coastal site of Sabratha, Tripolitania, as a case study, was able to calculate a density range of 165–415 people per hectare depending on the estimate of people per household (4–10). He argues that '...normal outer ranges of 100–400 people per hectare and likely ranges of 150–250 people per hectare' are reasonable for Roman cities in the Mediterranean (Wilson 2011: 176). For Roman-period urban centers on Crete, we lack estimates of total area, but Price does calculate that in the Hellenistic period, Gortyn, which became the Roman capital of Crete, had an area of 150 ha, and Kydonia had an area of 85ha (Price 2011: 30, table 2.4). Using Wilson's likely ranges (i.e., 150–250 people per hectare), the population of Gortyn was 22,500–37,500, while for Kydonia it was 12,750–21,250. Both cities expanded during the Roman period and may have had higher populations in AD 365. The same was likely the case for many settlements on Crete.

Political structures

One method for mitigating vulnerability is a strong, centralized government with a sufficient tax base for raising revenues (Smith 2013: 64). Like the rest of the Empire, Crete was subject to overlapping political structures with numerous forms of taxation. At the *polis* level, evidence that continues into the late-4th century AD shows that 'the two most important bodies were councils and the boards of magistrates' (Sanders 1982: 12). The head magistrate was the *protokosmos*, who was elected on an annual basis (Pałuchowski 2005a: 13). He was responsible for developing external relations, overseeing financial matters, publishing decrees and laws, and erecting dedications (Pałuchowski 2005a: 26–27). Additional private bodies and institutions were also in place to provide public welfare, such as an organization of businessmen at Gortyn (*IC* IV.278, ll. 290–291), and wealthy citizens who supported community-funded meals at sites like Lyttos (Guizzi 1999; Pałuchowski 2005b: 431–432).

On the island, a provincial council, or *koinon*, was also in place between the *polis*-level governments and the imperial institutions of the Roman Empire. Perhaps acting as a form of mediator between those various levels, its primary responsibilities were related to the imperial cult and the organization of games (Sanders 1982: 8). This *koinon* does suggest a degree of unification across the island, which is an important factor for mitigating vulnerability to a disaster.

At the level of imperial organization, several centuries under Roman rule had contributed to infrastructure improvements, including road systems, aqueducts and water supply networks, and harbours that connected Crete's inhabitants to each other and the rest of the Mediterranean. The island had seen some change prior to AD 365. Originally, Crete had been joined with the North African region of Cyrenaica to form a joint province, with Gortyn serving as the capital overseeing both regions. That occurred at least by 27 BC — and may have been in place as early as 67 BC (Chevrollier 2016: 13–14) — and lasted until the final decade of the 3rd century, when they were separated during reorganisations to provincial structures under Diocletian (Sanders 1982: 6). Cyrenaica was an important grain producer, and separating Crete from its North African neighbour curtailed opportunities for transferring supplies between the two regions under the authority of a provincial governor. Crete's remaining option was to apply to the imperial government for aid in a time of crisis. Such appeals are documented during a food shortage in AD 381 (Sanders 1982: 8) and following an earthquake in the early 7th century, when the emperor Heraclius provided aid to Gortyn (Wickham 2005: 628).

Religion

In antiquity, religion was often the lens through which a disaster's cause was interpreted after the fact: divine displeasure led to catastrophe and the need for ritual reparations. This bias continues into modern scholarship. The earthquake of AD 365 has been viewed as a catalyst for the widespread conversion of Crete's population to Christianity. According to Stathis Stiros (2010: 62), it marks '...the transition from the Roman to the Christian era in the island.' This begs the question of whether, prior to AD 365, religious vulnerability was high, with belief in pagan traditions at a tipping point. In other words, is this event the direct cause of conversion, one of several potential stimuli, or a distraction preventing careful assessment of the extent to which Crete's population was Christian prior to that event?

Stiros' argument (2001: 558–561) is based on the appearance of certain features in the archaeological record after AD 365, in particular Christian basilicas on Crete and at other sites in mainland Greece. For Crete, construction of the earliest Christian basilicas at Gortyn and Knossos dates to the early 5th century (Sweetman 2017: 5–6). Stiros also cites evidence at Kissamos for the establishment of a Christian cemetery in an area of the city that had been populated by houses prior to the disaster (Stiros and Papageorgiou 2001:

388). Rebecca Sweetman (2015, 2017) has investigated the construction of Christian basilicas starting by the late-4th century across the Greek world, noting that this process could be due to numerous factors. She observes that basilica construction results from '...strategic change and, more specifically, emergent change through experimentation and progress, while not denying elements of tension. The irony is that the more peaceful emergent view was less exceptional and therefore of little interest to contemporary historians of the period, and would not necessarily have been recorded' (2015: 287). This would argue against an earthquake, even one of high magnitude, being a primary catalyst for religious transformation. Instead, it could be one of many factors at play.

The AD 365 earthquake and the appearance of Christian basilicas in the decades afterward can also distract from a critical evaluation of the extent to which Christianity had spread across Crete prior to that event. Attempts to convert the island's population came early, as demonstrated by the *Letter of Titus* in the New Testament, where Paul instructed Titus to act as a missionary on the island. A century later, Gortyn and Knossos appear to have been home to bishops based on a letter from Dionysius of Corinth to a certain Philip of Gortyn and Pinytus of Knossos, as recorded by Eusebius (*Hist. Ecc.* 4.21). The persecutions of later centuries also impacted Crete. In AD 250, for instance, ten martyrs from six different sites across the island (Kydonia, Gortyn, Heraklion, Knossos, Lebena, and Panormos) were executed at Gortyn (Harrison 1993: 305). Lebena and Heraklion were harbour sites associated with Gortyn and Knossos respectively, while Kydonia was the largest city-state in western Crete. Panormos was a port likely connected to Eleutherna, which preserves a 3rd-century AD Christian inscription (Tzifopoulos 2000: 252–253, no. 12).

A 3rd century Christian inscription is also known from Kissamos (Bandy 1970: 128–129, no. 100), while 4th-century inscriptions have been attested at Kissamos (Bandy 1970: 123–124, no. 90, 128, no. 99, 129–130, no. 101), Pege near Stavromenos (Bandy 1970: 100–101, no. 74), the region of Mount Ida (Bandy 1970: 108–110, no. 80), Chersonissos (Bandy 1970: 92, no. 64), Elounda (Bandy 1970: 94–95, no. 67), and nearby Kolokytha (Bandy 1970: 95–96, no. 68). Farther east, Hierapytna sent a bishop to the Council of Sardis in AD 343, along with Kissamos and Kydonia (Sanders 1982: 45). Even the upland plains had exposure to Christianity. In the first half of the 4th century, two decrees preserved at the site of Lyttos appear to be aimed at protecting and re-establishing the rights of Christians who had been affected by persecutions, including the return of confiscated property (Harrison 1993: 296–304). The first (*IC* I.xviii.188) dates to AD 314 and likely coincides with the Edict of Milan issued by Constantine and Licinius in 313, which made Christianity a legal religion, while the second (*IC* I.xviii.189) dates to before AD 340.

The archaeological, literary, and epigraphic evidence combine to indicate a fairly extensive Christian population across the whole of Crete prior to AD 365. There is evidence for the religion in all parts of the island, including coastal and inland regions. Perhaps the remaining non-Christian population of the island was vulnerable to conversion at this time, but the extent of religious transformation following the earthquake may not have been as significant as has been hypothesized.

Cultural variables

Modern research into topics like demographics and disaster has demonstrated higher vulnerability for parts of a population. As Keith Smith documents (2013: 63), 'work on earthquake disasters has shown that survivors over 60 years of age and females are most likely to have severe injuries. Females also suffer most from psychiatric stress disorders.' This is tied to social factors and can be exacerbated in regions where cultural norms insulate or isolate women within a society. Such heightened vulnerability, for instance, was documented through a clinical psychiatric study following an earthquake that struck Taiwan in 1999 (Chen *et al.* 2001). From an archaeological perspective, cultural variables like age, health, immigration, sex, and ethnicity are among the most difficult to study. A detailed examination of a region's epigraphic record is often necessary to tease out interpretations, but conclusions can be problematic due to inherent biases in the available data (Scheidel 2000: 17). For early Roman Crete, very important work has been undertaken along these lines (e.g., Bowsky 1999), but similar studies are lacking for the mid-4th century, perhaps due to an absence of data from most sites.

We can deduce certain details that may have impacted vulnerability. Social networks are important for promoting resilience within a community (Smith 2013: 60). Martha Bowsky (1999) has demonstrated the existence of such networks through prosopographical studies of sites across Crete. They provide a level of cohesion in the face of a disaster, even if government aid was limited. By contrast, the abundance of harbours on Crete and the importance of the island as a transhipment hub likely resulted in a significant itinerant population without access to its own resources, shelter, or support networks, particularly during the sailing season, which lasted from March/April to October/November in antiquity (Beresford 2012: 9). This means that Crete's coastal sites had higher population density during this part of the year, a factor that can amplify the consequences of earthquakes and tsunamis (Papathoma *et al.* 2003: 381).

Economic inequality should also be considered. Studies have shown that 'disaster impact is exacerbated by large gaps between rich and poor which create tension and lower resilience to disaster' (Smith 2013: 62). A recent analysis has demonstrated that the traditional dichotomy of Roman society into poor (majority) and rich (minority) is oversimplified and that there was a distinct 'middling' income group (Scheidel and Friesen 2009). That group was still small, however, and the vast majority of the population existed at the level of subsistence, meaning that they had no cushion if an economic crisis arose. It is unlikely that Crete was an exception to that pattern. There is also the difficulty that, following a disaster like the AD 1303 earthquake, incomes were further reduced due to damage to production facilities and harbour infrastructure, which resulted in even greater poverty for much of the population.

Risk

The level of risk suggested by the hazard and vulnerability of Crete during the mid-4th century was very high and predicts a period of crisis following a disaster event. Despite regular seismic activity across the island, there was little expectation of a high-magnitude quake and tsunami. Available archaeological evidence suggests little to no preparedness for that type of event. A major disaster during the summer aggravated risk by placing additional stress on factors such as access to fresh water. Risk, however, would not have been uniform across the island. The earthquake may have had more severe impacts in the western and central part of Crete based on its epicenter. Coastal zones were also areas of elevated risk. Those zones, which boasted many of Crete's largest settlements by the mid-4th century, were susceptible to tsunami damage and have topographic features like loose sediments and slopes that can intensify earthquake damage. Coastal cities may have had high population densities along with temporary occupants like sailors who had limited access to their own resources. These locations were also at higher risk of experiencing problems with water supply during a disaster, particularly if a tsunami contaminated cisterns and other fresh-water supplies with sea water. Inland and upland regions were safe from the tsunami in AD 365 but still suffered during the earthquake. Risk may have been lower, though, in some cases. The inland areas of the Sphakia region, for example, appear to have had a low population density and perhaps greater access to natural resources like fresh water.

From a broader perspective, economic variables across the island may have led to elevated risk. Inequality, a characteristic of Roman society, causes difficulties during the recovery phase, and Crete's reliance on harbours was problematic since any damage hindered connectivity and access to resources that could reinvigorate prosperity, including revenues obtained from the collection of customs dues and the export of commodities from the island. Damaged harbours also limit access to aid from outside regions.

A strong centralized government can be a form of risk mitigation. Crete, overall, had multiple levels of governance (municipal, provincial, imperial) from which aid could be requested. The caveat, however, is that an event large enough to cripple the provincial government at Gortyn and widespread enough across parts of the Empire would limit the imperial government's ability to provide aid effectively and efficiently. Such an event could result in the numerous micro-regions of Crete reinvigorating levels of independence that had been characteristic of earlier periods on the island.

The aftermath of the AD 365 earthquake and tsunami

The above discussion of hazard, vulnerability, and risk associated with the AD 365 earthquake provides a contextual background for assessing the short-term and long-term consequences of this disaster for the island of Crete. As noted above, archaeologists have recorded evidence for destruction from this earthquake at a number of sites across the island. One challenge, however, is confirming whether the identified destruction deposits do in fact correspond with the AD 365 event. For centres like Eleutherna and Gortyn with histories of long-term, stratigraphic excavation, confidence can be high. At Eleutherna, for instance, excavations have identified numerous deposits associated with this earthquake, characterized by wall collapses, finds of complete pottery vessels, traces of fire, and in some cases human skeletons (Yangaki 2005: 43). Many other sites have been subject only to rescue excavations with very limited publication of data, rarely beyond short reports in the *Archaiologikon Deltion*. Finds from Kissamos associated with this earthquake, including skeletal remains, have been recovered and are in the local museum but await further publication (Stiros and Papageorgiou 2001: 387). There is logic in assuming that destruction deposits datable to the second half of the 4th century are connected to this earthquake, but caution is still necessary until more robust publication and justification of stratigraphy has been presented.

It is also important to avoid assuming that every site across the island suffered substantial destruction. The AD 1303 earthquake had an epicenter near Rhodes (Shaw *et al.* 2008: 275) and caused significant or total destruction to sites in eastern and central

Crete (Guidoboni and Comastri 1997: 63, fig. 2). In the western half of the island, the consequences were less severe. For AD 365, the earthquake was larger in magnitude and had a closer epicenter, suggesting that significant destruction could have spread across more of the island. Difficulty in identifying damage directly associated with the earthquake at Hierapytna and Kouphonisi, though, could indicate that impacts were less severe toward the eastern end of Crete.

Short-term impacts

Destruction during this disaster was indiscriminate as it affected both public and private structures. Public buildings were destroyed, including a theatre complex at Aptera (Niniou-Kindeli and Chatzidakis 2016: 144), a bath complex at Eleutherna (Yangaki 2005: 43), a *bouleterion* (public meeting space) at Lyttos (French 1992–1993: 72) and most of the monumental structures at Gortyn (Blackman 2000–2001: 128). Large, extravagant residential complexes were not spared. At Kissamos, in particular, there is evidence that many such structures were destroyed (Stiros and Papageorgiou 2001: 387–388). A large peristyle house was also damaged at Aptera (Niniou-Kindeli and Christodoulakos 2004: 319). There is no available archaeological data concerning low-income housing across the island but based on comparable events like the AD 1303 earthquake (Guidoboni and Comastri 1997: 63), few of those structures may have been left standing at many sites.

The tsunami resulting from the earthquake likely caused additional damage. Limited evidence for its direct impacts on Crete (see Werner *et al.* 2018) makes it necessary to turn to proxy evidence. Literary accounts from contemporary authors like Ammianus Marcellinus (26.10.15–19), who write about impacts across the Mediterranean, suggest that the devastation caused by this tsunami was significant. Computer modeling of the tsunami generated by the Theran eruption in the late-Bronze Age shows that, depending on variables like obstacles and conditions along the shoreline, coastal inundation on Crete may have reached 250–450m (Novikova *et al.* 2011: 673). At Palaikastro in northeastern Crete, sedimentary evidence indicates that the Theran wave crested at a height of 9m and reached 300m inland, even affecting structures located in elevated areas (Bruins *et al.* 2008: 208–209). Similar levels of inundation and damage are likely for the AD 365 tsunami.

The consequences of the AD 1303 earthquake and tsunami provides another proxy that allows us to hypothesize significant problems for Crete's coastal infrastructure during the AD 365 event. As discussed above, the majority of the island's harbours were damaged or destroyed in 1303, a factor that contributed to nearly two decades of poverty. Even larger artificial harbours were not spared, including at Heraklion, the capital city at that time. In the decades following the AD 1303 event, Venetian officials enlarged the harbour at Heraklion, which included extending two large moles and adding a breakwater to offer more protection (Gertwagen 1988: 142–143).

If uplift contemporary with this earthquake did occur, this had the potential to transform the topography of large portions of western Crete. As noted above, there is debate around the extent of any uplift associated with the AD 365 earthquake. At Phalasarna, a rock-cut fish tank appears to have been raised above sea level at this time (Francis 2010: 266–267). In contrast, at Stavromenos, along the north-central coast of Crete, numerous structures were submerged (Whitley *et al.* 2006–2007: 114). The coastal regions of the Sphakia region of southwestern Crete may not have seen much direct impact from uplift at this point in the island's history (Price *et al.* 2002). This contrasts earlier assessments where significant transformation to this part of Crete had been hypothesized. At Phoinix-Loutro, for instance, uplift in AD 365 had been associated with an increase in usable land along the coast at the eastern end of the islet where the site is located (Moody *et al.* 1998: 92). One intriguing outcome of any coastal uplift associated with an earthquake is that it can provide protection against a tsunami (Papadopoulos *et al.* 2010: 153).

The death toll from this disaster is not known but was likely high. For the 1303 earthquake, which had an epicenter farther from Crete and also generated a tsunami, sources dating one to two centuries after the event put the number of fatalities on the island at around 4000, but it is difficult to assess the accuracy of this information (Guidoboni and Comastri 1997: 68). Victims of the AD 365 episode have been uncovered at several sites, including from a residence at Kissamos (Stiros and Papageorgiou 2001: 387) and from a bath complex at Eleutherna (Yangaki 2005: 43, 50). At Gortyn, in a theatre next to the Temple of Pythion Apollo, the skeletons of two horses were revealed in the AD 365 destruction layer (Whitley 2004–2005: 113). A stall for these horses had been constructed next to the eastern entrance to the theatre, leading the excavators to speculate that the function of the structure had changed prior to the earthquake. The small number of victims overall could signify that many of the casualties were recovered from the rubble after the disaster. Alternatively, it could reflect the limited excavations that have been undertaken at Roman sites across the island and the small number of confirmed AD 365 destruction deposits that have been identified.

Along with number of casualties, one additional aspect of disasters that archaeology has difficulty documenting is the days and weeks following an event, including responses and any attempts at rescue and recovery. Archaeological data rarely has this level of resolution. Despite that, there may be some evidence of local responses soon after the AD 365 earthquake. Kissamos preserves traces of open-air kitchens and ovens for baking bread established among the ruins from the earthquake (Whitley 2002–2003: 87), suggesting some type of relief effort. At Aptera, a bath complex may have also seen temporary use after the earthquake, perhaps being covered with some type of cloth or awning (Morgan *et al.* 2009–2010: 199). A large building at Tsoutsouros was mostly abandoned due to destruction, except for a single room with a large ceramic storage vessel, which appears to have seen continuous use (Whitley 2003–2004: 80). Any response from beyond the island may have been limited, at least initially, by damage to harbour facilities and the fact that there was likely destruction to a number of coastal regions in the central and eastern Mediterranean as a result of the tsunami (see De Martini *et al.* 2010: 54; Gerardi *et al.* 2012: 1195; Hamouda 2009; Vött *et al.* 2009: 29).

Material recovery is apparent across Crete following the earthquake, although much of the evidence for this is apparent 15–20 years after the earthquake and tends to involve recycled or repurposed materials. At Agia Kyriaki in south-central Crete, a gap in time is evident between the destruction and reconstruction of the settlement (Blackman and Branigan 1977: 74). Reconstruction at Kissamos started a few years before AD 400 (Stiros and Papageorgiou 2001: 388), while inscriptions at Gortyn dated to *c.* AD 383 document work on several structures (Di Vita 1995: 971, 2000: 783–788). Repairs were a long-term process due to the extent of destruction. For some parts of Gortyn, including sections of the Praetorium, indications of rebuilding only become evident in the final decade of the 4th century (e.g., Lippolis 2000: 455, 461).

At Kissamos, evidence for repairs shows reliance on recycled materials. Houses are documented as being '...of poor construction, mostly shabbily repaired structures. The sewage system of the previous period was abandoned and filled with debris...The plan of the town and of houses changed; walls had a different orientation, some were built on the older mosaic floors' (Stiros and Papageorgiou 2001: 388). At Gortyn, the large theatre became a source of construction material (Montali 2006: 299), and several structures were built or rebuilt from recycled debris, including a colonnaded porch along a road east of the sanctuary of Pythion Apollo (Whitley *et al.* 2005–2006: 109) and parts of the Praetorium (e.g., Lippolis 2000: 455). Some areas of Gortyn were also left abandoned into the 7th century (Lippolis 2016: 171). Perhaps this indicates a decline in the population or a dispersal away from urban centres at this time. This is also suggestive of a reduction in wealth across the island, an idea supported by the fact that some large-scale residential complexes at Kissamos were not repaired, but instead were given over to new functions. In one case, a house was replaced by a paved east-west street and a cemetery (Whitley *et al.* 2006–2007: 120). Wealthy residential and public sectors were converted to poorer housing districts and industrial facilities after the earthquake at several sites. A new section of houses and production facilities, designated by the excavators as the Byzantine Quarter, was constructed to the west of the Praetorium at Gortyn (Lippolis 2016: 171).

Renovations to damaged water supply systems may also have been a priority, as is demonstrated at Gortyn. In the 2nd century AD, an aqueduct was constructed at Gortyn that transported approximately 14,000m^3 of water to the site per day from springs at Zaros and Gergeri, located about 8km to the north (Giorgi 2016: 60–63). The state of this aqueduct system during the 3rd and 4th centuries is not well documented, but it was likely damaged during the AD 365 earthquake. Near Apomarmà, approximately 6km north of Gortyn, an inscription dated to the 4th or 5th century records repairs to the aqueduct in that area (Bandy 1970: 77–78, no. 47; Giorgi 2016: 64). These repairs may have been necessitated by damage from the earthquake. There are also renovations to a siphon bridge located 500m to the northeast of the acropolis at Gortyn that may also date to the late-4th/early 5th century and be connected to earthquake damage (Giorgi 2016: 151–152, no. 18). In addition, repairs to water pipes are documented, including construction of new pipes from amphorae of North African origin known as *spatheia* (Catling 1979–1980: 51, 1985–1986: 89).

Long-term impacts and transformation

To what extent did the AD 365 earthquake lead to cultural transformation on the island of Crete? Mass conversion to Christianity (see Stiros 2010: 62), as discussed above, has been proposed as a direct result of this disaster, but that fails to account for widespread evidence for that religion prior to 365. The scale of this event makes it easier to interpret transformation in its aftermath. Suzanne Leroy (2006: 5) in a discussion of environmental catastrophes observes for the AD 365 earthquake that it '...could have had the capacity for major impacts resulting in collapse of a civilization.' Leroy mentions this in the context of possible seismic clustering during the third quarter of 4th century when a number of large earthquakes that struck the eastern Mediterranean have been identified, including one

that impacted the Levant in AD 363 (see Guidoboni *et al.* 1994: 264–267; Stiros 2001: 552, table 1). There is no existing evidence on Crete, or in other regions of the eastern Mediterranean, for collapse or long-term decline resulting from these earthquakes, however, and critical assessment is necessary when assessing their outcomes.

Natural disasters are tempting to promote as causes of transformation evident in the archaeological record. The challenge, however, is correlating the event itself with any indication of documented change (Grattan 2010: 180; Torrence and Grattan 2002: 2–8). Most societies are actually quite resilient in the face of catastrophe and are able to recover regardless of the size of the disaster in question. Evidence for collapse tends to be apparent only for populations which were already undergoing some form of decline prior to the disaster (Grattan and Torrence 2007: 2). It is necessary to critique the possibility of coincident timing and reflect carefully on the extent to which an event like an earthquake was the direct cause of identified transformations (Grattan 2006: 11).

For Crete and the AD 365 earthquake, it can be challenging to make direct connections between the disaster and subsequent change. Evidence at Malia in north-central Crete, for instance, suggests that there may have been re-occupation during the 4th century AD in an area known as Agia Varvara, which sits approximately 1.2km to the east of the Bronze Age Palace (Whitley *et al.* 2006–2007: 104). This area had been abandoned since the Bronze Age and it is intriguing to consider what factors led to new settlement. The chronology of these finds presented in the brief report of the excavations is not overly helpful. Did this re-occupation occur prior to AD 365 or after? If after, was it tied to the earthquake and suggestive of a desire to build new structures rather than to repair or rebuild older ones, or is it related to other processes that are more difficult to see?

Political transformation during the 4th century is also tempting to connect to the AD 365 earthquake. As Sanders (1982: 9) notes, evidence for the pan-Cretan *koinon* appears to be absent after the 4th century. While the island's centralized government was important for mitigating vulnerability to a disaster, evidence for significant damage at Gortyn resulting from this earthquake points to difficulties in mobilizing relief efforts. Prior to Roman rule, the topography of Crete had promoted independence among numerous micro-regions. If populations were forced to fend for themselves, perhaps this stimulated a resurgence in that mentality across the island. This fits with patterns that have been documented during the aftermath of modern disasters. Analyzing cultural responses to a firestorm that struck Oakland and Berkeley, California on October 21, 1991, Susanna Hoffman (1999: 137–152) observed three phases of recovery. The first was individuation, where survivors had to fend for themselves. This circumstance can be exacerbated when there is no warning that a disaster will strike. Following this was a longer phase of cohesion where survivors coalesced into groups and began the process of rebuilding. These groups can form a very strong collective mentality. Finally, there was closure, where the population settled into the new normal following the disaster. For Crete and its historical propensity for micro-regional governance, the second, unification phase may have been localized across the island and reduced or eliminated the need for the *koinon* as part of the new normal after AD 365.

A shift in priorities related to water use on many Cretan sites may be owed to the AD 365 earthquake. At Aptera, a bath complex damaged during the earthquake was transformed into a pottery kiln (Niniou-Kindeli and Christodoulakos 2004: 319). A bath in the Praetorium at Gortyn appears to have been only partially restored beginning in the late-4th century (Rizzo 2000a: 612–13; 2000b: 706). There is evidence that baths continued to be built and used across Crete after the late-4th century, as we see at sites like Chersonissos (Grigoropoulos *et al.* 2008), but even then, there are indications of changes, perhaps due to concern about water supply. At Chersonissos, bath complexes tend to be much smaller from the late-4th century onwards, and in at least one case limited to a single tub. The earthquake struck during the height of summer when access to water across Crete is limited. This may have led populations at many sites to reduce water consumption at facilities like bath complexes following this event.

Much of the available evidence for destruction does concentrate in coastal centers, but inland regions were not immune, as evidence for damage at Eleutherna, Gortyn, and Lyttos demonstrates. For some inland centers, including Knossos (Sanders 1982: 152) and Lyttos (Harrison 1993: 320), this earthquake has been blamed for their supposed abandonment in the late-4th century and the transfer of their population to the coastal centers of Heraklion and Chersonissos respectively. There is now clear evidence that settlement at Knossos continued long after the 4th century (Sweetman 2004), and 7th or 8th century fortifications have been documented at Lyttos (Gigourtakis 2011–2013). The process of coastal cities on Crete increasing in size and stature had been underway since the early Roman period due to the island's prominence in pan-Mediterranean trade networks. Perhaps the earthquake caused some people to move, but it likely did not result in the complete abandonment of inland settlements.

Survey archaeology also suggests changes to settlement patterns after the 4th century. From at least the 5th century AD onwards, increases in rural settlement are evident in a number of regions across Crete, including Sphakia (Moody *et al.* 1998: 87–90), the western Mesara (Watrous *et al.* 2004: 370–371), the western Pediada (Watrous *et al.* 2017: 111), the Lasithi plain (Watrous 1982: 25), Vrokastro (Hayden 2004: 275–276), the Isthmus of Ierapetra (Watrous *et al.* 2012: 85), and Kavousi (Haggis 2005: 87). However, this is likely not a direct result of the AD 365 earthquake. As was noted above, climate change starting in the 3rd century AD led to drier conditions on Crete that may have stimulated movement to inland areas with better access to water (Moody 2016: 77). Perhaps the earthquake caused this process to speed up, but it was already underway prior to that event.

From the perspective of religion, there are assertions that the AD 365 earthquake prompted religious transformation on Crete related to the rise of Christianity. Robust evidence for the presence of Christianity on the island prior to this disaster is available, however, indicating that it was not a singular catalyst for mass conversion. Disasters can lead to a surge in religious activity (e.g., Güney 2015), but increased evidence for a Christian presence on Crete after AD 365 relates to a number of processes that were underway prior to that date. That being said, some indications of change are evident. At Gortyn, structures associated with pagan deities, when reconstructed, were used for functions different than their original purpose (Lippolis 2016: 171). In this context, the earthquake may have led to a rupture that enabled new patterns of material culture to arise. Bath houses at Chersonissos also begin to show Christian influence following the earthquake (Grigoropoulos *et al.* 2008: 313). One complex had a cross carved into a stone block and was divided into two compartments, perhaps to segregate male and female bathers. Evidence for Christianity after the AD 365 disaster may also be more apparent because religion can be important for social recovery. It provides a support network that can complement other institutions within a particular area and can function even in the absence of support from government institutions.

Any economic crisis brought about by this disaster was probably short-term. Reconstruction of harbours and the re-establishment of trade would have helped to counter this issue. The island continued to be an important exporter of commodities, particularly goods packaged in amphorae, until well into the 7th century, indicating that the economy did recover (Gallimore 2016: 179–182). By the 5th century, resources were once again available to engage in large-scale building projects, including the numerous Christian basilicas that spread across the island, many of which were quite elaborate in their construction (Sanders 1982: 89–131). This points to resilience and supports the interpretation that the AD 365 earthquake did not lead to substantial cultural transformation across Crete.

Conclusions

As other scholars have noted (e.g., Fitzhugh 2012: 36–37), focus on hazard, vulnerability, and risk provides a beneficial framework for interpreting archaeological data associated with disaster. It contextualizes the degree to which communities and societies show resilience to the impact of particular events. For the island of Crete in the mid-4th century, the risk of negative consequences associated with a high-magnitude earthquake was elevated. Resulting destruction was widespread and led to an extended period of economic crisis. Yet, the island did recover, once again becoming a prosperous economic hub and a location of large-scale building activity. Organizing available data for Crete before, during, and after the AD 365 earthquake within the context of hazard analysis offers a refined picture of the impacts of this disaster.

This approach is also beneficial for studying Crete in succeeding centuries. Hazard, vulnerability, and risk are dynamic entities, constantly shifting at different levels within a society (Tierney 1999: 228). For Crete, the AD 365 earthquake may have been the first of a seismic series that struck the island between the 4th and 7th centuries AD. This period in the Eastern Mediterranean is often referred to as the Early Byzantine Tectonic Paroxysm (Pirazzoli 1986; Pirazzoli *et al.* 1996) and corresponds with indications of significant transformation in many regions. Assessment of shifting vulnerabilities and risk over the course of these centuries could help to address the extent to which earthquakes contributed to decline and transition. Archaeology can benefit from engaging more with hazard-based approaches common in other fields that study disasters in order to better understand the varied impacts of these events.

Acknowledgements

Some of the ideas discussed here were presented in public lectures at Concordia University in Montreal and at the University of Toronto. I thank D. Matthew Buell, Jane Francis, and SeungJung Kim for organizing those talks. In both cases, questions from the audience helped me to rethink my approach to the topic. Jessica Allin, Martha Bowsky, and Jennifer Muslin read drafts of the paper and their comments were invaluable for improving the organization and ideas presented here. The work was supported by Wilfrid Laurier University and the Social Sciences and Humanities Research Council of Canada; it also received assistance from the Research Support Fund.

Bibliography

Primary Sources

Ammianus Marcellinus. *History,* Vol. 2: Books 20–26. Translated and edited by J.C. Rolfe. Loeb Classical Library 315. Cambridge: Harvard University Press, 1940.

Eusebius. *Ecclesiastical History*, Vol. 1: Books 1–5. Translated and edited by K. Lake. Loeb Classical Library 153. Cambridge: Harvard University Press, 1926.

Stadiasmus. *Geographi Graeci Minores*, 2 vols. Edited by K. Müller. Cambridge: Cambridge University Press, 2010.

Strabo. *Geography*, Vol. 5: Books 10–12. Translated and edited by H.L. Jones. Loeb Classical Library 211. Cambridge: Harvard University Press, 1928.

Secondary Sources

Allbaugh, L.G. 1953. *Crete: A Case Study of an Underdeveloped Area*. Princeton: Princeton University Press.

Bandy, A.C. 1970. *The Greek Christian Inscriptions of Crete*. Athens: Christian Archaeological Society.

Becker, D., T. Meier, M. Bohnhoff and H.-P. Harjes. 2010. Seismicity at the convergent plate boundary offshore Crete, Greece, observed by an amphibian network. *Journal of Seismology* 14: 369–392.

Beresford, J. 2012. *The Ancient Sailing Season*. Leiden: Brill.

Betancourt, P.P. 2009. Evidence from Pseira for the Santorini eruption, in D.A. Warburton (ed.) *Time's Up! Dating the Minoan Eruption of Santorini*: 101–106. Aarhus: Aarhus University Press.

Blackman, D. 2000–2001. Archaeology in Greece, 2000–2001. *Archaeological Reports* 47: 1–144.

Blackman, D. 2001–2002. Archaeology in Greece, 2001–2002. *Archaeological Reports* 48: 1–115.

Blackman, D. and K. Branigan. 1977. An archaeological survey of the lower catchment of the Ayiofarango Valley. *Annual of the British School at Athens* 72: 13–84.

Bowsky, M.W. 1999. The business of being Roman: the prosopographical evidence, in A. Chaniotis (ed.) *From Minoan Farmers to Roman Traders: Sidelights on the Economy of Ancient Crete* (Heidelberger althistorische Beiträge und epigraphische Studien, 29): 305–348. Stuttgart: Franz Steiner Verlag.

Bruins, H.J., J.A. MacGillivray, C.E. Synolakis, C. Benjamini, J. Keller, H.J. Kisch, A. Klügel and J. van der Plicht. 2008. Geoarchaeological tsunami deposits at Palaikastro (Crete) and the Late Minoan IA eruption of Santorini. *Journal of Archaeological Science* 35: 191–212.

Caputo, R., S. Catalano, C. Monaco, G. Romagnoli, G. Tortorici and L. Tortorici. 2010. Active faulting on the island of Crete (Greece). *Geophysical Journal International* 183: 111–126.

Catling, H.W. 1979–1980. Archaeology in Greece, 1979–1980. *Archaeological Reports* 26: 3–53.

Catling, H.W. 1983–1984. Archaeology in Greece, 1983–1984. *Archaeological Reports* 30: 3–70.

Catling, H.W. 1985–1986. Archaeology in Greece, 1985–1986. *Archaeological Reports* 32: 3–101.

Chaniotaki-Starida, L. and M. Mari. 2004. Παλαιοχριστιανική Χερρόνησος (4ος–7ος α.ι. μ.Χ.), in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. II: 287–299. Padua: Bottega d'Erasmo.

Chen, C.C., T.L. Yeh, Y.K. Yang, S.J. Chen, I.H. Lee, L.S. Fu, C.Y. Yeh, H.C. Hsu, W.L. Tsai, S.H. Cheng, L.Y. Chen and Y.C. Si. 2001. Psychiatric morbidity and post-traumatic symptoms among survivors in the early stage following the 1999 earthquake in Taiwan. *Psychiatry Research* 105: 13–22.

Chevrollier, F. 2016. From Cyrene to Gortyn. Notes on the relationship between Crete and Cyrenaica under Roman domination (1st century BC – 4th century AD), in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 11–26. Oxford: Oxbow Books.

Dawdy, S.L. 2006. The taphonomy of disaster and the (re) formation of New Orleans. *American Anthropologist* 108: 719–730.

De Martini, P.M., M.S. Barbano, A. Smedile, F. Gerardi, D. Pantosti, P. Del Carlo and C. Pirrotta. 2010. A unique 4000 year long geological record of multiple tsunami inundations in the Augusta Bay (eastern Sicily, Italy). *Marine Geology* 276: 42–57.

Di Vita, A. 1986. I terremoti a Gortina in età romana e proto-bizantina. Una nota. *Annuario della scuola di Atene e delle missioni italiane in Oriente* 57–58: 435–440.

Di Vita, A. 1995. Archaeologists and earthquakes: the case of 365 AD. *Annali di Geofisica* 38: 971–976.

Di Vita, A. 2000. Appunti per un'ipotesi di ricostruzione, in A. Di Vita (ed.) *Gortina* V.1. *Lo scavo del Pretorio (1989–1995)* (Monografie della scuola archeologica di Atene e delle missioni italiane in Oriente 12): 782–800. Padua: Bottega d'Erasmo.

Driessen, J. 2013. Time capsules? Destructions as archaeological phenomena, in J. Driessen (ed.) *Destruction: Archaeological, Philological and Historical Perspectives*: 5–22. Leuven: Presses universitaires de Louvain.

Fitzhugh, B. 2012. Hazards, impacts, and resilience among hunter-gatherers of the Kuril Islands, in J. Cooper and P. Sheets (eds) *Surviving Sudden Environmental Change: Answers from Archaeology*: 19–42. Boulder: University Press of Colorado.

Francis, J. 2010. A re-evaluation of rock-cut fish installations in Roman Crete. *Creta Antica* 11: 255–275.

French, E.B. 1992–1993. Archaeology in Greece, 1992–1993. *Archaeological Reports* 39: 3–81.

Gallimore, S. 2015. *An Island Economy: Hellenistic and Roman Pottery from Hierapytna, Crete*. New York: Peter Lang.

Gallimore 2016. Crete's economic transformation in the late Roman Empire, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 175–188. Oxford: Oxbow Books.

Ganas, A. and T. Parsons. 2009. Three-dimensional model of the Hellenic Arc deformation and origin of the Cretan uplift. *Journal of Geophysical Research. Solid Earth* 114: 1–14.

Gerardi, F., A. Smedile, C. Pirrotta, M.S. Barbano, P.M. De Martini, S. Pinzi, A.M. Gueli, G.M. Ristuccia, G. Stella and S.O. Troja. 2012. Geological record of tsunami inundations in Pantano Morghella (south-eastern Sicily) both from near and far-field sources. *Natural Hazards and Earth Systems Science* 12: 1185–1200.

Gertwagen, R. 1988. The Venetian port of Candia, Crete (1299–1363): construction and maintenance. *Mediterranean Historical Review* 3: 141–158.

Gigourtakis, N. Η οχυρωμένη Βυζαντινή Ακρόπολη της Λύκτου. *Κριτική Εστία* 14: 49–64.

Giorgi, E. 2016. *Archeologia dell'acqua a Gortina di Creta in età protobizantina*. Oxford: Archaeopress.

Grattan, J. 2006. Aspects of Armageddon: an exploration of the role of volcanic eruptions in human history and civilization. *Quaternary International* 151: 10–18.

Grattan, J. 2010. Testing eventful archaeologies: eventful archaeology and volcanic 'disasters', in D.J. Bolender (ed.) *Eventful Archaeologies: New Approaches to Social Transformation in the Archaeological Record:* 179–188. Albany: State University of New York Press.

Grattan, J. and R. Torrence. 2007. Beyond gloom and doom: the long-term consequences of volcanic disasters, in J. Grattan and R. Torrence (eds) *Living under the Shadow: The Cultural Impacts of Volcanic Eruptions*: 1–18. Walnut Creek: Left Coast Press.

Grigoropoulos, D., K. Galanaki, A. Kastanakis, C. Papadaki and Y. Triantafyllidi. 2008. Baths in Roman and late Antique Chersonesos: preliminary remarks on their topography, architecture and building history. *Creta Antica* 9: 303–318.

Guidoboni, E. and A. Comastri. 1997. The large earthquake of 8 August 1303 in Crete: seismic scenario and tsunami in the Mediterranean area. *Journal of Seismology* 1: 55–72.

Guidoboni, E., A. Comastri and G. Traina. 1994. *Catalogue of Ancient Earthquakes in the Mediterranean up to the 10th Century*. Rome: Istituto nazionale di geofisica.

Guizzi, F. 1999. Sissizi a Creta in età imperiale? Forme di imposizione tradizionali e finanze cittadine a Lyttos. *Collection de l'Ecole française de Rome* 256: 275–284.

Güney, H. 2015. Poseidon as a god of earthquake in Roman Asia Minor. *Revue Numismatique* 172: 293–315.

Haggis, D.C. 2005. *Kavousi* I*: The Archaeological Survey of the Kavousi Region* (Prehistory Monographs 16). Philadelphia: INSTAP Academic Press.

Hamouda, A.Z. 2009. A reanalysis of the AD 365 tsunami impact along the Egyptian Mediterranean coast. *Acta Geophysica* 58: 687–704.

Harries, K.A. 1996. Earthquake resistant construction in Classical Rome, in *Eleventh World Conference on Earthquake Engineering*: 1–7. New York: Elsevier.

Harrison, G.W.M. 1993. *The Romans and Crete*. Amsterdam: Adolf M. Hakkert.

Hatzidimitriou, P.M., E.E. Papadimitriou, D.M. Mountrakis and B.C. Papazachos. 1985. The seismic parameter b of the frequency-magnitude relation and its association with the geological zones in the area of Greece. *Tectnophysics* 120: 141–151.

Hayden, B.J. 2004. The Roman period in the Vrokastro area, eastern Crete: settlement patterns, sites, and subsistence, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. II: 269–290. Padua: Bottega d'Erasmo.

Hewitt, K. 1995. Excluded perspectives in the social construction of disaster. *International Journal of Mass Emergencies and Disasters* 13: 317–339.

Hoffman, S.M. 1999. The worst of times, the best of times: toward a model of cultural response to disaster, in A. Oliver-Smith and S.M. Hoffman (eds) *The Angry Earth: Disaster in Anthropological Perspective*: 134–155. London: Routledge.

Kelly, A. 2006. Distribution of Cretan aqueducts: a window onto Romanization, in Th. Detorakis and S. Papadaki-Oekland (eds) *Πεπραγμένα του Θ΄ Διεθνούς Κρητολογικού Συνεδρίου (Ελούντα, 1-6 Οκτωβρίου 2001)*, Vol. A5: 391–405. Herakleion: Ministry of Culture.

Kouremenos, A. 2013. Houses and Identity in Roman Knossos and Kissamos, Crete: A Study in Emulative Acculturation. Unpublished DPhil dissertation, University of Oxford.

Leatham, J. and S. Hood. 1958–1959. Sub-marine exploration in Crete, 1955. *Annual of the British School at Athens* 53–54: 263–280.

Leonard, J.R. 1995. Harbour terminology in Roman periploi, in S. Swiny, R.L. Hohlfelder and H.W. Swiny (eds) *Res Maritimae: Cyprus and the Eastern Mediterranean from Prehistory to Late Antiquity*: 163–200. Atlanta: Scholars Press.

Leroy, S.A.G. 2006. From natural hazard to environmental catastrophe: past and present. *Quaternary International* 158: 4–12.

Lippolis, E. 2000. Il Settore C, in A. Di Vita (ed.) *Gortina* V.1. *Lo scavo del Pretorio (1989–1995)* (Monografie della scuola archeologica di Atene e delle missioni italiane in Oriente 12): 389–513. Padua: Bottega d'Erasmo.

Lippolis, E. 2016. Roman Gortyn: from Greek polis to provincial capital, in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 155–174. Oxford: Oxbow Books.

Montali, G. 2006. *Il teatro romano di Gortina*. Padua: Bottega d'Erasmo.

Moody, J. 2016. Roman climate in the southwest Aegean: was it really different?, in J.E. Francis and

A. Kouremenos (eds) *Roman Crete: New Perspectives*: 59–82. Oxford: Oxbow Books.

Moody, J., L. Nixon, S. Price and O. Rackham. 1998. Surveying poleis and larger sites in Sphakia, in W.G. Cavanagh and M. Curtis (eds) *Post-Minoan Crete: Proceedings of the First Colloquium on Post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College London, 10–11, November 1995* (British School at Athens Studies 2): 87–95. London: British School at Athens.

Morgan, C., R.K. Pitt, D. Mulliez and D. Evely. 2009–2010. Archaeology in Greece, 2009–2010. *Archaeological Reports* 56: 1–201.

Mourtzas, N. and E. Kolaiti. 2017. Geoarchaeology of the Roman harbour of Ierapetra (SE Crete, Greece). *Méditerranée. Revue géographique des pays méditerranéens* (Online). <http://journals.openedition.org/mediterranee/7965>.

Niniou-Kindeli, V. and N. Chatzidakis. 2016. The Roman theatre at Aptera: a preliminary report, in J. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 127–153. Oxford: Oxbow Books.

Niniou-Kindeli, V. and G. Christodoulakos. 2004. Ρωμαϊκή Απτέρα – μία πρώτη προσέγγιση, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. II: 313–334. Padua: Bottega d'Erasmo.

Nixon, L., J. Moody, S. Price and O. Rackham. 2000. *The Sphakia Survey: Internet Edition.* <https://www.classics.ox.ac.uk/sphakia-survey>.

Novikovka, T., G.A. Papadopoulos and F.W. McCoy. 2011. Modelling of tsunami generated by the giant Late Bronze Age eruption of Thera, south Aegean Sea, Greece. *Geophysical Journal International* 186: 665–680.

Nur, A. 2008. *Apocalypse: Earthquakes, Archaeology, and the Wrath of God*. Princeton: Princeton University Press.

Oliver-Smith, A. 2013. Disaster risk reduction and climate change adaptation: the view from applied anthropology. *Human Organization* 72: 275–282.

Oliver-Smith, A. and S.M. Hoffman (eds) 1999. *The Angry Earth: Disaster in Anthropological Perspective*. London: Routledge.

Pałuchowski, A. 2005a. *Fastes des Protocosmes des Cités Crétoises sous le Haut Empire*. Warsaw: Wroclaw University Press.

Pałuchowski, A. 2005b. Le regime des cites crétoises sous la Haut Empire. *Klio* 87: 421–444.

Papadopoulos, G.A., E. Daskalaki, A. Fokaefs and N. Giraleas. 2010. Tsunami hazard in the eastern Mediterranean Sea: strong earthquakes and tsunamis in the West Hellenic Arc and Trench System. *Journal of Earthquake and Tsunami* 4: 145–179.

Papathoma, M., D. Dominey-Howes, Y. Zong and D. Smith. 2003. Assessing tsunami variability, an example from Heraklio, Crete. *Natural Hazards and Earth Science System* 3: 377–389.

Pettegrew, D.K. 2010. Regional survey and the boom-and-bust countryside: re-reading the archaeological evidence for episodic abandonment in the late Roman Corinthia. *International Journal of Historical Archaeology* 14: 215–229.

Pirazzoli, P.A. 1986. The Early Byzantine tectonic paroxysm. *Zeitschrift für Geomorphologie*, Supplementary Issue 62: 31–49.

Pirazzoli, P.A., J. Laborel and S.C. Stiros. 1996. Earthquake clustering in the eastern Mediterranean during historical times. *Journal of Geophysical Research* 101: 6083–6097.

Price, S. 2011. Estimating ancient Greek populations: the evidence of field survey, in A. Bowman and A. Wilson (eds) *Settlement, Urbanization, and Population*: 17–35. Oxford: Oxford University Press.

Price, S., T. Higham, L. Nixon and J. Moody. 2002. Relative sea-level changes in Crete: reassessment of radiocarbon dates from Sphakia and west Crete. *Annual of the British School at Athens* 97: 171–200.

Rackham, O. and J. Moody. 1996. *The Making of the Cretan Landscape*. Manchester: Manchester University Press.

Redman, C.L. 2005. Resilience theory in archaeology. *American Anthropologist* 107: 70–77.

Reinhardt, E.G., B.N. Goodman, J.I. Boyce, G. Lopez, P. van Hengstum, W.J. Rink, Y. Mart and A. Raban. 2006. The tsunami of 13 December AD 115 and the destruction of Herod the Great's harbour at Caesarea Maritima, Israel. *Geology* 34: 1061–1064.

Rizzo, M.A. 2000a. Il Settore E: gli ambienti orientali delle Terme, in A. Di Vita (ed.) *Gortina* V.1. *Lo scavo del Pretorio (1989–1995)* (Monografie della scuola archeologica di Atene e delle missioni italiane in Oriente 12): 523–688. Padua: Bottega d'Erasmo.

Rizzo, M.A. 2000b. Il Settore F: gli ambienti centrali delle Terme, in A. Di Vita (ed.) *Gortina* V.1. *Lo scavo del Pretorio (1989–1995)* (Monografie della scuola archeologica di Atene e delle missioni italiane in Oriente 12): 689–736. Padua: Bottega d'Erasmo.

Sanders, I.F. 1982. *Roman Crete. An Archaeological Survey and Gazetteer of Late Hellenistic, Roman, and Early Byzantine Crete*. Warminster: Aris and Phillips.

Sarris, A., C. Loupasakis, P. Soupios, V. Trigkas and F. Vallianatos. 2010. Earthquake vulnerability and seismic risk assessment of urban areas in high seismic regions: application to Chania city, Crete island, Greece. *Natural Hazards* 54: 395–412.

Scheffers, A. and S. Scheffers. 2007. Tsunami deposits on the coastline of west Crete (Greece). *Earth and Planetary Science Letters* 259: 613–624.

Scheidel, W. 2000. Progress and problems in Roman demography, in W. Scheidel (ed.) *Debating Roman Demography*: 1–82. Leiden: Brill.

Scheidel, W. and S.J. Friesen. 2009. The size of the economy and the distribution of income in the Roman Empire. *Journal of Roman Studies* 99: 61–91.

Semerari, G.S. 2017. Towards an archaeology of disentanglement. *Journal of Archaeological Method and Theory* 24: 542–578.

Shaw, B., N.N. Ambraseys, P.C. England, M.A. Floyd, G.J. Gorman, T.F.G. Higham, J.A. Jackson, J.-M. Nocquet, C.C. Pain and M.D. Piggott. 2008. Eastern Mediterranean tectonics and tsunami hazard inferred from the AD 365 earthquake. *Nature Geoscience* 1: 268–276.

Smith, K. 2013. *Environmental Hazards: Assessing Risk and Reducing Disaster*, 6th ed. London: Routledge.

Solberg, C., T. Rossetto and H. Joffe. 2010. The social psychology of seismic hazard adjustment: re-evaluating the international literature. *Natural Hazards and Earth System Sciences* 10: 1663–1677.

Sørensen, M.B., M. Spada, A. Babeyko, S. Wiemer and G. Grünthal. 2012. Probabilistic tsunami hazard in the Mediterranean Sea. *Journal of Geophysical Research: Solid Earth* 117: 1–15.

Spratt, T.A.B. 1865. *Travels and Researches in Crete,* 2 vols. London: J. van Voorst.

Stiros, S.C. 2001. The AD 365 earthquake and possible seismic clustering during the fourth to sixth centuries AD in the eastern Mediterranean: a review of historical and archaeological data. *Journal of Structural Geology* 23: 542–562.

Stiros, S.C. 2010. The 8.5+ magnitude, AD365 earthquake in Crete: coastal uplift, topography changes, archaeological and historical signature. *Quaternary International* 216: 54–63.

Stiros, S.C. and S. Papageorgiou. 2001. Seismicity of western Crete and the destruction of the town of Kisamos at AD 365: archaeological evidence. *Journal of Seismology* 5: 381–397.

Sweetman, R. 2004. The changing nature of Knossos: Roman to late Antique – some problems, in G. Cadogan, E. Hatzaki and A. Vasilakis (eds) *Knossos Palace, City, State: Proceedings of the Conference in Herakleion Organised by the British School at Athens and the 23rd Ephoreia of Prehistoric and Classical Antiquities of Herakleion, in November 2000, for the Centenary of Sir Arthur Evan's Excavations at Knossos* (British School at Athens Studies 12): 481–488. London: British School at Athens.

Sweetman, R. 2015. The Christianisation of the Peloponnese: the case for strategic change. *Annual of the British School at Athens* 110: 285–319.

Sweetman, R. 2017. Networks and church building in the Aegean: Crete, Cyprus, Lycia and the Peloponnese. *Annual of the British School at Athens* 112: 1–60.

Tierney, K.J. 1999. Toward a critical sociology of risk. *Sociological Forum* 14: 215–242.

Tierney, K.J. and A. Oliver-Smith. 2012. Social dimensions of disaster recovery. *International Journal of Mass Emergencies and Disasters* 30: 123–146.

Tinti, S., A. Armigliato, G. Pagnoni and F. Zaniboni. 2005. Scenarios of giant tsunamis of tectonic origin in the Mediterranean. *ISET Journal of Earthquake Technology* 42: 171–188.

Tomlinson, R.A. 1994–1995. Archaeology in Greece, 1994–1995. *Archaeological Reports* 41: 1–74.

Tomlinson, R.A. 1995–1996. Archaeology in Greece, 1995–1996. *Archaeological Reports* 42: 1–47.

Torrence, R. and J. Grattan. 2002. The archaeology of disasters: past and future trends, in R. Torrence and J. Grattan (eds) *Natural Disasters and Cultural Change*: 1–18. London: Routledge.

Tzifopoulos, Y. 2000. The inscriptions, in P.G. Themelis, *Προτοβυζαντινή Ελευθερνα*, τομέας I, B' τόμος: 237–260. Rethymnon: University of Crete Press.

Vött, A., H. Brückner, S.M. May, D. Sakellariou, O. Nelle, F. Lang, V. Kapsimalis, S. Jahns, R. Herd, M. Handl and I. Fountoulis. 2009. The lake Voulkaria (Akarnania, NW Greece) palaeoenvironmental archive – a sediment trap for multiple tsunami impacts in the mid-Holocene. *Zeitschrift für Geomorphologie* (Suppl. 53): 1–37.

Wagstaff, J.M. 1965. Traditional houses in modern Greece. *Geography* 50: 58–64.

Watrous, L.V. 1982. *Lasithi: A History of Settlement on a Highland Plain in Crete* (*Hesperia*, Suppl. 18). Princeton: American School of Classical Studies at Athens.

Watrous, L.V., D. Hadzi-Vallianou and H. Blitzer. 2004. *The Plain of Phaistos: Cycles of Social Complexity in the Mesara Region of Crete* (Monumenta archaeologica 23). Los Angeles: Cotsen Institute of Archaeology.

Watrous, L.V., D.C. Haggis, K. Nowick, N. Vogeikoff-Brogan and M. Schultz. 2012. *An Archaeological Survey of the Gournia Landscape* (Prehistory Monographs 37). Philadelphia: INSTAP Academic Press.

Watrous, L.V., D.M. Buell, E. Kokinou, P. Soupios, A. Sarris, S. Bechmann, G. Rethemiotakis, L.A. Turner, S. Gallimore and M.D. Hammond. 2017. *The Galatas Survey: The Socio-Economic and Political Development of a Contested Territory in Central Crete during the Neolithic–Ottoman Periods* (Prehistory Monographs 55). Philadelphia: INSTAP Academic Press.

Weiberg, E. 2012. What can resilience theory do for (Aegean) archaeology?, in N.M. Burström and F. Fahlander (eds) *Matters of Scale: Processes and Courses of Events in the Past and the Present*: 147–165. Stockholm: Postdoctoral Archaeological Group.

Werner, V., K. Baika, P. Fischer, H. Hadler, L. Obrocki, T. Willerhäuser, A. Tzigounaki, A. Tsigkou, K. Reicherter, I. Papanikolaou, K. Emde and A. Vött. 2018. The sedimentary and geomorphological imprint of the AD 365 tsunami on the coasts of southwestern Crete (Greece) – examples from Sougia and Palaiochora. *Quaternary International* 473: 66–90.

Whitley, J. 2002–2003. Archaeology in Greece, 2002–2003. *Archaeological Reports* 49: 1–88.

Whitley, J. 2003–2004. Archaeology in Greece, 2003–2004. *Archaeological Reports* 50: 1–92.

Whitley, J. 2004–2005. Archaeology in Greece, 2004–2005. *Archaeological Reports* 51: 1–118.

Whitley, J., S. Germanidou, D. Urem-Kotsou, A. Dimoula, I. Nikolakopoulou, A. Karnava and E. Hatzaki.

2005–2006. Archaeology in Greece, 2005–2006. *Archaeological Reports* 52: 1–112.

Whitley, J., S. Germanidou, D. Urem-Kotsou, A. Dimoula, I. Nikolakopoulou, A. Karnava and D. Evely. 2006–2007. Archaeology in Greece, 2006–2007. *Archaeological Reports* 53: 1–121.

Wickham, C. 2005. *Framing the Early Middle Ages: Europe and the Mediterranean: 400–800*. Oxford: Oxford University Press.

Wilson, A. 2011. City sizes and urbanization in the Roman Empire, in A. Bowman and A. Wilson (eds) *Settlement, Urbanization, and Population*: 161–195. Oxford: Oxford University Press.

Wisner, B., P. Blaikie, T. Cannon and I. Davis. 2004. *At Risk: Natural Hazards, People's Vulnerability and Disasters*, 2nd ed. London: Routledge.

Yangaki, A. 2005. *La céramique des IVe-VIIIe siècles ap. J.-C. d'Eleutherna*. Athens: University of Crete Press.

14.

Afterword

Jane E. Francis

The title of this volume, *Change and Transition*, was initially intended to reflect the ancient data, to demonstrate the shifts that occurred from the Hellenistic period, in which Crete was embroiled in centuries of inter-state warfare, to the stabilising *Pax Romana*, when the island came under Roman rule and was established as a senatorial province with Cyrenaica. The chapters explore the major changes that occurred subsequent to the 67 BC conquest through archaeological, numismatic, and epigraphic evidence, along with ancient literary sources, that go far beyond the cessation of war.

The break between the Hellenistic and Roman periods on Crete is, on one hand, fairly sharp, and evident across a wide array of evidence classes. The Cretans adopted Roman cultural and artistic practices and style, as seen in the mosaics, bath-houses, theatres and amphitheatres, and villa construction. They began to participate in Roman trading networks for goods both coming into Crete, like imported pottery but also for commodities going out, like Cretan wine packaged in amphorae, and medicinal herbs. The new political system required new coinage. Cities who had backed the wrong side in the invasion died out in favour of pro-Roman settlements, which were rewarded, such as Gortyn. Foreigners came to Crete for a variety of reasons — social, religious, political, economic —, including the Italian veterans who were given land in the new *Colonia Iulia Nobilis Cnosus*.

On the other hand, however, it is also now becoming clear that many elements of life and the economy in Hellenistic Crete did not disappear with the coming of the Romans, but rather shifted to accommodate new administration and practices. The importance of the island's coastline did not abate, but changes in settlement patterns and almost certainly new trading partners changed focus and necessitated, in some cases, construction of permanent harbour facilities. The exploitation of Crete's natural resources continued. The importance of aromatic and medicinal plants and herbs, documented since the Classical period, continued throughout the Roman era, although certainly with changes to its management and perhaps even cultivation, collection, and packaging. This may also be the case for Crete's timber industry. The manufacture of wine in Hellenistic Crete, about which we have increasingly more data, is documented by at least two major amphora shapes. The better-known Roman phase of this industry clearly reflects an explosion of production and export on an epic scale from the 1st century AD onwards, but this is part of a continuum, rather than as a new business. There are also many instances, mostly rural, where settlements began to constrict both in their land holdings and populations well before the Roman period. The pottery of late-Hellenistic Crete is still relatively unstudied, and it remains difficult to date with precision some settlements, especially from survey material. It is thus possible that households and populations began to move to other locations in the decades before the Roman invasion, for reasons completely unconnected with this event — and there was certainly a myriad of reasons for such shifts in late-Hellenistic Crete —, but that current knowledge does not allow us to understand these patterns completely.

As this volume unfolded, it became clear that *Change and Transition* now has a different meaning: not only are attitudes towards the study of Hellenistic and Roman Crete changing, but the directions of research and scholarship are also shifting. It is thus possible to view the title as referring both to the interpretation of evidence for the societal, cultural, economic, and political situations of the late 1st century BC and 1st century AD, and also to the way in which scholars now use this data.

Following the ground-breaking research Ian Sanders in the late 1970s, and later by G. W. M. Harrison's work in the 1980s, scholars of Hellenistic and Roman Crete focused upon publishing and interpreting the general information about the archaeological, numismatic, and epigraphical evidence from the island. Several main themes ultimately coalesced from this extremely large amount of data, enhanced by ongoing excavations at sites with major Roman phases and the rise in survey archaeology: e.g., the economy of the island in the Roman era — including use of natural resources —,

evidence for Romanisation or acculturation within Roman 'norms,' shifting alliances — and reasons for them — in the period of the Hellenistic wars, and the island's ritual practices. All of these are standard subjects pursued by scholarship across the Roman Empire, and they had the result of firmly implanting Crete as a Roman province within the greater context of the Roman world.

Now things are changing, and we are beginning to change the questions about Hellenistic and Roman Crete. As this volume demonstrates, new approaches and methodologies are being integrated into research. Trade continues to be a main consideration; the situation for Crete is complicated by the lack of primary sources, and the focus has long been upon the remains of transport amphorae that served the Cretan wine industry. Since the work of French and Greek archaeologists on amphora kiln sites, further production centres have been identified and studied, and scholars are now able to compare not only forms but also fabrics across wide parts of the Cretan landscape (Francis *et al.*). The packaging of commercial goods, like those in Cretan amphorae — wine, but also probably honey, oil, and even fish sauce —, is now under investigation (Kouremenos; Sekunda): we are now not only asking 'what' was being shipped, but 'how,' especially for invisible commodities.

Information from surveys has focused attention on the use of landscapes, but now this is being combined with the study of Crete's coastlines (Curtis; Coutsinas). Such research comes together with studies like that of Nick Sekunda, who is able to assign the trade in whetstones in late-Hellenistic east Crete to Italian traders. By the Augustan era, Romans at ceramic production centres in Italy have established trading relationships and routes with Cretan cities, as made clear by the evidence from stamps on Italian Sigillata vessels found on Crete (Baldwin Bowsky). Such research shifts the focus away from questions about what was traded to 'with whom' did the Cretans trade, with a great deal more precision.

The importance of landscape use is also at the heart of studies of settlement patterns (Coutsinas, Curtis), both for the exploitation of natural resources (Kouremenos) — those important enough to attract the attention of ancient authors, for instance — but also for the role of the Cretan countryside in trade. The significant role played by harbours and anchorages, and all attendant fittings, is, in the Roman period at least, conveyed by the increasing expenditures given to these sites, as viewed in the archaeological remains (Curtis). It is now possible to ask 'where' such trade occurred whether coming into Crete or going out — or even transhipment between Cretan centres —, even if answers at present are speculative. At least now we are in a position to pose the questions.

Also of significance and rarely explored through comparative approaches is the data from the islands ringing Crete, especially those in the southeast, like Chrysi and Kouphonisi (Coutsinas). Each of these, for example, has been studied independent of the others, but their material remains show dramatically different, yet often contemporary patterns of landscape use, settlement, and overall importance within the history of this region. The questions raised by such work — why did one area develop differently from its neighbour — require nuanced studies and interpretations of multiple types of evidence and approaches, which are now available.

Added to standard discussions about landscapes, and land ownership and management can now be in-depth analyses of clay, one of Crete's most valuable and accessible resources. The increasing application of fabric studies now allows scholars to move beyond simple identification of a known ware to an understanding of imitations, local productions, inter-island and foreign connections, and ceramic technologies (Francis *et al.*).

The status of individual cities in Hellenistic and Roman Crete has also come under more intensive focus, especially as epigraphical evidence continues to be studied and, in some cases, re-interpreted. The manner in which the Cretan poleis functioned, with their magistracies, coinage, and treaties/laws, is much better known, and such information now allows for a greater understanding of, in particular, their Hellenistic phases. The example presented in this volume, of Phaistos (Paluchowski) examines a sovereign state becoming a dependent community , then a *sympoliteia*, and finally destroyed by its stronger neighbour, Gortyn. Attention is paid to the populations involved in these changes and their social and political value, but now this individual city history can be set within broader systematic changes occurring in both rural and urban Crete. This is bit a small, but important, piece of a larger puzzle.

A site whose history is much less known is Rhytion, which, like Phaistos, grew up in the shadow of Gortyn, although at a slightly greater distance away (Galanaki *et al.*). This study is illuminating for what it reveals about settlements outlying larger urban centres — in this case several cemeteries — and their relationship to each other and to the surrounding landscape. Research into the mortuary landscape of Hellenistic and Roman Crete has not been abundant, but work like this provides greater amounts of comparative data for both tomb types and architecture as well as for burial artifacts.

The information about status and class provided by burial assemblages, tomb types, and cemetery location can also be reflected in numismatic studies. Vassiliki Stefanaki's study of the names included on late-Hellenistic and Roman coin issues from Cretan cities identifies upper class magistrates and provides an

understanding of class relations in what was necessarily a significant transformation upon the coming of Roman rule. Prosopographical studies bring further focus to the individuals, their families, and their communities within the broader societal political changes of the early Roman era.

The utility of data from survey projects, which illuminates the history of rural settlements, is also coming to the forefront (Coutsinas, Francis *et al.*). It is now imperative that we understand the broad stretches of the Cretan countryside without necessarily tied these communities to cities or large towns, but to see them as potentially independent, yet part of interwoven networks of trade and local economies, both maritime and terrestrial.

Such a shift in attention to rural evidence should not, however, detract from the cities, about which we know much more, due to an abundance of information. Yet new approaches and analysis of a wider range of evidence types is providing more nuanced interpretations of these sites. For instance, Anna Moles' analysis of skeletal remains from burials in the Knossos area shows new directions in how such results can be used and their broader importance. While the raw data derived from such studies offers insight into the diet and health of the community, it is now possible to identify changes in the remains and correlate these more precisely with social, cultural, and even political shifts known from historical documents and other archaeological data, such as the move towards a more stable and prosperous Roman Crete. Even further, results from such studies can be considered within the broader context of Crete well outside one specific site.

Of course, the greatest change that occurred in Hellenistic and Roman Crete came right at its end, with the AD 365 earthquake. Studies of this cataclysmic event have long been the proviso of scientists — mainly geologists and engineers — who have provided solid analyses of what happened and when. Now, the ramifications of this event are being examined archaeologically, and, as Scott Gallimore's research demonstrates, push us to re-consider building methods and materials, the spread of Christianity on Crete, and, in general, disaster response. Too long understood as the end point of Roman Crete, this event can now be seen as a disaster, to be sure, but one that did not end Roman Crete, but altered it, in some places, considerably.

This too can be said of the study of Roman Crete, which is now evolving into more sophisticated, nuanced, and precise scholarship that encompasses a broader range of artifact types and methodological approaches. There is now sufficient amount of data for comparative studies, and collaborative projects with a recognition of the importance of the Hellenistic and Roman periods, as well as individual studies, continue to provide new insights. We look forward to future generations of scholars, increased archaeological data, increased numbers of collaborative research projects, and innovative interpretations, as the study of Roman Crete continues to change and transition.

List of Scholarship on Crete by George W. M. Harrison

Monographs

1994. *The Romans and Crete.* Amsterdam: Adolph M. Hakkert.

Articles

Forthcoming. Ten things you need to know about Roman Crete (for your own research), in M.C. Curtis (ed.) *Proceedings of 19th International Congress of Classical Archaeology, Cologne and Bonn, 22–26 May 2018.*

2019. Illness and disease in Roman Crete, in N. Stamatakis, S. Giannadaki, R. Tzanaki, R. Bellante and D. Dolapsakis (eds) *Πεπραγμένα του ΙΒ΄ Διεθνούς Κρητολογικού Συνεδρίου (Ηράκλειο 25.9.2016)*: On-line: <https://12iccs.proceedings.gr/el/proceedings/category/38>

2018. A dedication from Hellenistic Phalasarna: Phoenician influence on Crete?, in I. Gavrilaki (ed.) *Πεπραγμένα του ΙΑ' Διεθνούς Κρητολογικού Συνεδρίου (Ρέθυμνο 21–27 Οκτωβρίου 2011)* Vol. A2,1: 313–324. Rethymnon: Istoriki kai Lagografiki Etaireia Rethymnis.

2016. Theatres, plays and the '3rd century crisis', in J.E. Francis and A. Kouremenos (eds) *Roman Crete: New Perspectives*: 185–193. Oxford: Oxbow Books.

2011. Pliny and Cretan coastal installations, in M. Andreadaki-Vlazaki and E. Papadopoulou (eds) *Πεπραγμένα του ΙΑ' Διεθνούς Κρητολογικού Συνεδρίου (Χανιά, 1-8 Οκτωβρίου 2006)*, Vol. A4: 31–48. Chania: Philologikos Syllogos 'O Chrysostomos'.

2008. Plutarch's Crete, in A.G. Nikolaidis (ed.) *The Unity of Plutarch's Work: 'Moralia' Themes in the 'Lives,' Features of the 'Lives' in the 'Moralia'*: 791–803; with J. Francis.

2006. Model for the longevity of paganism in Roman Crete: Aesculapius, in T. Detorakis and S. Papadaki-Oekland (eds) Πεπραγμένα του Θ΄ Διεθνούς Κρητολογικού Συνεδρίου (Ελούντα, *1-6* Οκτωβρίου *2001*), Vol. A5: 449–459. Herakleion: Etairia Kretikon Istorikon Meleton.

2005. Two Byzantine farms, in P.P. Betancourt, C. Davaras and R. Hope Simpson (eds) *Pseira* 9.2. *The Archaeological Survey of Pseira Island* (Prehistory Monographs 12): 365–368. Philadelphia: INSTAP Academic Press; with R. Hope Simpson.

2005. Roman pottery summary, in B.J. Hayden (ed.) *Reports on the Vrokastro Area, Eastern Crete* 3. *The Vrokastro Regional Survey Project: Sites and Pottery* (University Museum Monographs 123): 269–387. Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology; with B.J. Hayden.

2005. Fish and ships: fish farming in Roman Crete. *Ancient World* 36: 123–133; with J. Francis.

2004. Organization of dwelling space in Roman Crete: the *disiecta membra* of cities, in M. Livadiotti and I. Simiakaki (eds) *Creta romana e protobizantina: atti del congresso internazionale (Iraklion, 23–30 settembre 2000)*, Vol. III: 751–762. Padua: Bottega d'Erasmo.

2004. Roman settlement history, in B.J. Hayden (ed.) *Reports on the Vrokastro Area, Eastern Crete* 2. *The Settlement History of the Vrokastro Area and Related Studies* (University Museum Monographs 119): 199–213. Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology; with B.J. Hayden.

2003. Gortyn: first city of Roman Crete. *American Journal of Archaeology* 107: 487–492; with J. Francis.

2000. A Roman's view from Vrocastro: prosperity and romanization of eastern Crete, in N. Panagiotakis and Th. Detorakis (eds) Πεπραγμένα του Η΄ Διεθνούς Κρητολογικού Συνεδρίου (Ηράκλειο, 9–14 Σεπτεμβρίου 1996), Vol. A1: 545–552. Herakleion: Etairia Kretikon Istorikon Meleton.

2000. The Byzantine efflorescence of Crete. *Journal of Ancient Civilizations* 15: 43–50.

1988. Crete the ordinary, in W.G. Cavanagh and M. Curtis (eds) *Post-Minoan Crete: Proceedings of the first colloquium on post-Minoan Crete held by the British School at Athens and the Institute of Archaeology, University College London, 10–11 November 1995* (British School at Athens Studies 2): 129–134.

1994. Roman Crete: old (and false) perceptions die hard. *Cretan Studies* 4: 137–148.

1991. Changing patterns in land tenure and land use in Roman Crete, in G. Barker and J. Lloyd (eds) *Roman Landscapes: Archaeological Survey in the Mediterranean Region* (Archaeological Monographs of the British School at Rome 2): 115–121.

1990. A Roman marble quarry in eastern Crete. *Cretan Studies* 2: 147–150.

1990. Gortyn in Byzantine Crete. *Journal of Roman Archaeology* 3: 502–505.

1988. Background to the first century of Roman rule in Crete. *Cretan Studies* 1: 125–155.

1983. Roman Knossos: plaster as an indicatory of type of destruction. *American Journal of Archaeology* (abstract) 87: 228.

Book Reviews

2019. A comprehensive study of water at Gortyn (Crete): E. Giorgi, *Archeologia dell'acqua a Gortina di Creta in età protobizantina*. *Journal of Roman Archaeology* 32: 859–863; with J. Francis.

2013. A. Di Vita, Gortina di Creta. *Quindici secoli di vita urbana. Journal of Roman Archaeology* 25: 870–875; with J. Francis.

2008. G. Montale. *Il Teatro Romano di Gortina*. *Journal of Roman Archaeology* 21: 604–609.

2003. H.A. Raab. *Rural Settlement in Hellenistic and Roman Crete: The Akrotiri Peninsula*. *Journal of Roman Archaeology* 16: 1–4; with J. Francis.

2003. A. Ausilia. *Creta Antica 1 and 2*. *American Journal of Archaeology* 107: 307–308.

1997. A. Marangou-Lerat. *Le vin et les amphores de Crète*. *American Journal of Archaeology* 101: 805–806.

1993. L.H. Sackett (ed.) *Knossos from Greek City to Roman Colony: Excavations at the Unexplored Mansion II*. *American Journal of Archaeology* 97: 815–816.

Conference Presentations

2018. The ins and outs of Cretan commerce. *19th Congress of Classical Archaeology* (Bonn). *Proceedings of 19th International Congress of Classical Archaeology, Cologne and Bonn, 22–26 May 2018.*

2016. Illness and disease in Roman Crete. *ΙΒ΄ Διεθνούς Κρητολογικού Συνεδρίου (Ηράκλειο, 21–25 Σεπτεμβρίου 2016)*.

2016. Stitching Shadows — re-emergence of local traditions. *The Enigma of Late Hellenistic and Roman Crete: Unanswered Questions. 1st International Conference of the Colloquium on Roman Crete*, Nottingham.

2012. Midgets squatting on the shoulders of giants? Continuity of 'performance' in civic life in the 3rd century CE. *10th Roman Archaeology Conference,* Frankfurt.

2011. A silver dedication from Phalasarna. *ΙΑ΄ Διεθνές Κρητολογικό Συνέδριο*, Rethymnon.

2007. Tourism infrastructure in Roman Crete. *Archaeological Institute of America, 107th Annual Meeting*, San Diego.

2006. Harbouring fantasies in Roman Crete. *Archaeological Institute of America, 106th Annual Meeting*, Montreal.

2006. Pliny and Cretan coastal installations. *Ι΄ Διεθνές Κρητολογικό Συνέδριο*, Chania.

2005. Plutarch's Crete. *8th International Congress of the International Plutarch Society*, Rethymnon; with J. Francis.

2003. Something fishy in Roman Crete. *16th International Congress of Classical Archaeology*, Boston; with J. Francis.

2003. Pursuing pirates: a phantom menace? *99th Annual Meeting of the Classical Association of the Middle West and South*, Lexington; with J. Francis.

2003. The functional interpretation of water installations. *Archaeological Institute of America, 104th Annual Meeting* (New Orleans); with J. Francis.

2001. Cults in Crete in the Roman empire. *Θ΄ Διεθνές Κρητολογικό Συνέδριο*, Elounda.

2000. Private architecture in Roman Crete. *Convegno internazionale de la Creta romana e protobizantina*, Herakleion.

1998. Crete and Palestine: tramp steamers and comparanda. *Second Colloquium on Post-Minoan Crete*, Herakleion.

1997. South of the Asterousia (Crete): a prosperous market niche. *Archaeological Institute of America, 98th Annual Meeting*, Chicago.

1996. A Roman's view from Vrokastro. *Η΄ Διεθνές Κρητολογικό Συνέδριο*, Herakleion.

1995. Crete the ordinary. *British School at Athens Colloquium on Post-Minoan Crete*, London.

1989. Roman Crete: old perceptions die hard. *Classical Association of the Mid-West and South*, Lexington.

1988. Archaeology at the seams: changing patterns in land tenure and land use in Roman Crete. *British School at Rome Colloquium on Roman Agrarian Structures in the Mediterranean*, Rome.

1987. Roman Achaea and Crete: principal trade routes in antiquity. *10th British Museum Classical Colloquium*, London.

1984. Plutarch's hometown. *Archaeological Institute of America, 85th Annual Meeting*, Toronto.

1983. Tethering the sheep to the wolf: the unification of Cyrenaica and Crete. *Cambridge Colloquium on Cyrenaica*, Cambridge.

1982. Roman Knossos: plaster as indicator of type of destruction. *Archaeological Institute of America, 83rd Annual Meeting*, Philadelphia.

Index

C

D

E

F

G

H

I

J

K

L

M

N

O

P

R

S

T

U

V

W

X

Z